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ADDRESS.

SANITARY ADMINISTRATION.

Read in the Section on State Medicine, at the Forty-fourth Annual Meeting of the American Medical Association.

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The value of health to the family, to the community and to the nation has come to be understood and appreciated as it never was before. During the last few decades public sanitation has made surprising progress. The positive discoveries relating to the protection and preservation of health have proved their verity by their practical application, and have strengthened the claim of public hygiene to be ranked among the applied sciences. In scarcely any department of human progress have the indications of successful accomplishment been more marked, more satisfactory, or of greater direct value to the welfare and happiness of mankind, than in the unfolding and development of the principles and natural laws upon which modern scientific public hygiene is based.

Let us take a retrospective glance at the beginning of a movement which is still progressing with an undiminished impetus. In the East End of London, known as Whitechapel, recently made notorious by several brutal murders, at a place situated on the borders of a large and stagnant pond there occurred in 1838 a severe outbreak of disease. The abruptness, the violence and the limits of the epidemic clearly indicated some local cause. The late Edwin Chadwick, who had already made an enviable reputation as an original thinker and as a man of rare judgment and great executive ability, was applied to by the parochial authorities for advice. He was at the time the Secretary of the Poor Law Board. He readily persuaded his Board to institute a medical commission, and himself selected its members. He directed the character and extent of the investigation. He did not limit it to the existing epidemic, but made it to include the sanitary condition of the whole city of London. The judgment and foresight of Edwin Chadwick were never more conspicuously exhibited than in all this proceeding. 1, in the selection of the commission, who were among the most competent of living men; 2, in seizing the occasion as an object lesson to impress the public mind with the importance of public hygiene.

The gravity of the outbreak justified the procedure, and the man and the opportunity came together. [1]No commission of this character had ever before been formed. The exhaustive and instructive reports which were made, detailing with eloquent accuracy and fearless plainness of speech the shameless pollution of the water supply, and other dangerous influences to which the people in the chief city of the world were exposed, greatly aroused public attention. "These reports," says B. W. Richardson, "became texts in sanitation, and were so much in demand that many thousands were distributed among the people." It was the beginning of public interest in sanitary reform. It made an impression that could not be readily effaced. It was not only instructive, but it was also very suggestive. And the suggestions presently became active realities. Thus, if diseases result from unwholesome surroundings, with what diseases are such conditions most associated?

The next step came naturally, but only as such great movements do, after much effort and by powerful influence, but it came, to-wit: the registration of the causes of death. This result, to-wit: the enactment of the registration law of the causes of death, can be directly traced to the influence of the reports on the outbreaks of the epidemic in the East End of London in 1838. It gave to the world its most splendid statistician, Dr. William Farr, who for more than forty years was the genius who directed and utilized the registration of the vital statistics of England.

In these two points we have the foundation of practical public hygiene, two cardinal principles, viz.: sanitary inspection and the registration of the causes of death. It is not necessary in this presence to trace the progress of public sanitation from that time to the present. We all know something of the rapid growth in practical methods, and of the marvelous results which they have accomplished.

The prominent idea which it is my aim to develop to-day is, that in this country, that is, in our own United States, the practice of public hygiene lags far behind the theory and the science of it. In the old and long established governments of Europe, the advantages derived from science take effect earlier than they do in this country. The people there are more accustomed to trust and obey the powers that be than they are here. Here, if the people have not the gratification of trying to turn out all the incumbents of public offices every year they feel that they are not enjoying all the privileges of a free country. Then again, the doctrine of self-government among us is carried to an extreme degree in practice; so that the principle of the greatest good to the greatest number is often sacrificed to the claim that every community, however small, has the right to govern itself in all matters pertaining to local interests, and the health of a community is still too often regarded as preëminently a matter of only local interest.

Hence in some States, especially in my own, the sanitary administration is divided into just as many little sovereignties as there are local governments of any kind. Every town, every borough and every city in Connecticut has its own health authorities, each having jurisdiction over their own little terri-

[1] The Health of Nations, vol 1, p. xliii.

tory, and each making sanitary regulations and exercising their powers entirely independently and without any reference to adjoining similar dynasties. They are under no common direction, and have no uniform system of practice. This might not be so unfortunate in its results if unsanitary influences and contagions were accustomed to show any respect for town authorities or city limitations. Now it is quite obvious, on a little reflection, that very serious consequences will naturally result from these queer conditions. One exceedingly unfavorable effect is this: it rarely happens that the limited jurisdiction of a health officer affords him occupation enough to give him a reasonable support. He, therefore, in the great majority of instances regards his official duties as secondary in importance and, consequently, they are usually performed only in a perfunctory manner, or not at all, and often these offices are only accepted by men of inferior ability.

Again, the uncertain tenure of office, from the frequent popular elections for the usual term of only one year, tends to prevent the incumbent from acquiring any enthusiasm or interest in his work. Still again, the public mind either assumes that no special skill or fitness for the office is necessary, or else that the possession of such skill and fitness is universal, and as the office is not usually remunerative, it is not apt to be accepted by competent citizens or else it is made an appendage, ex-officio to some other office, the functions of which may not have the most remote relationship to the proper qualifications and duties of the sanitary officer. This clearly indicates a want of proper appreciation on the part of the public of the true functions of such an officer and of their importance.

Sanitary administration, whether in a rural or an urban community, deals with the highest interests of man in the social state; it aims to provide a safeguard to every individual, and protect him from the perils inherent to life in communities; it is one of the chief factors in the promotion of public prosperity and general happiness. For there is nothing so disastrous to the public welfare, nothing so productive of personal misery and suffering, as disease and death. A nation physically feeble, and whose people are subject to frequent epidemics can not be prosperous; it can not be happy. When, therefore, we reflect upon these facts, the apathy and indifference of the public to this subject is cause for profound surprise. "For life is not to live, but to be well," said Martial, an epigrammatic poet of the first century.

The principles of self-government which these little towns feel that it is an injustice to be deprived of, are not rightly comprehended by the popular mind. If government is needed at all, it is highly desirable that those who are governed shall get all the advantages possible from the restrictions imposed upon them. Hence when different communities in neighboring towns and cities have a common interest in the results of government, it would seemingly go without saying, that there should be some common adjustment and unification of the code of laws in which they are all mutually concerned. It has long been recognized by wise legislators, "that every branch of administration needs a central direction, which holds in its hands all the threads of the different local portions." Isolated, separate, independent self-governments, by towns and municipalities, have no cohesiveness or uniformity of methods. They lack the advantage of guidance by a central authority, which with a comprehensive acquaintance with their common, as well as their individual needs, can weld together and wisely direct and control their sanitary work.

The practical sanitation of to-day has outgrown the lethal methods which have been so long in vogue. The pressing needs of the times in regard to the conservation of public health, are that such radical changes shall be made, in old ways of sanitary administration, as will enable the most economical and efficient application of the laws of sanitary science. Sanitary administration is sometimes designated "State medicine," by which may be understood that function of the State, in the exercise of which it aims to put the people of the State in such relation with themselves and their environment, in all things affecting their health, that they will need to take the minimum amount of medicine. This implies a general and comprehensive system for the State, with a central authoritative supervision and control of subordinate officials. A central administration, in which the same thing will be always done in much the same way in any part of the State where it is needed to be done at all, would be a vastly different thing from the too prevalent practice in many places of what might be called "town medicine," in contrast with "State medicine." Town medicine, in which each town is an independent, isolated and disjointed government whose appreciation of the principles of public hygiene are as narrow as the limit of its own little territory, and whose policy is: "Not to act until obliged to do so, and then to do as little as possible."

The inefficiency, the waste of energy, the want of applied intelligence, or worse, energy misapplied through ignorance, all condemn town medicine as inadequate, expensive and largely barren of results. Public hygiene deals not alone with local conditions. It has to do with the welfare of populations settled over wide areas of territory, and under such varying conditions that the common good of the whole can not be attained without a comprehensive acquaintance of the mutual relations and interests which the separate towns or communities within those areas may bear each other. Town medicine as such is obsolete, belongs to a by-gone age and should no longer assume a responsibility for which in the nature of things it is incompetent.

The true function of town sanitary administration in the future is in the capacity of a component part of a general comprehensive system, guided and directed in its general work by a central authority, upon plans and methods devised with reference to the best good of all the communities interested. In this way, not only will the particular town be benefited, but it will derive a great reflex benefit from the better sanitary condition of all surrounding towns. Sanitary science is of recent growth, but its growth has been vigorous and healthy. Treatises on public hygiene have been written since the days of Hippocrates, but it is only within the last two decades that accumulating knowledge has crystallized in form and taken a scientific character. In the words of Dr. Guy: "It has to do with persons of every rank, of both sexes, of every age. It takes cognizance of the houses and places in which they live; of their occupations and modes of life; of the food they eat, the

water they drink, the air they breathe. It follows the child to school; the laborer and artisan into the field, the mine, the factory, the workshop; the sick man into the hospital; the pauper into the workhouse; the lunatic to the asylum; the thief to the prison. It is with the sailor in his ship, the soldier in his barrack, and it accompanies the emigrant to his new home beyond the seas. To all these, it makes application of a knowledge remarkable for its amount, and the great variety of sources whence it is derived. To physiology and medicine it is indebted for what it knows of health and disease; it levies large contributions on chemistry, geology and meteorology; it coöperates with the architect and engineer; its work commends itself to the moralist and divine."

Sanitation has advanced beyond the mere suppression of those grosser nuisances which conspicuously offend the senses, and are so often the subjects of complaints between neighbors. The deadly maladies like typhoid fever, cholera, consumption, etc., do not announce their presence to their victim by appreciable signals, until they have passed the guards and have gained possession of the citadel. They do not herald their approach by any impression on the sense of sight or smell, of taste or touch, but they silently enter, intrench themselves in our vitals, and begin their fatal work before we are conscious of their presence. But modern sanitation has put detectives on their track who have traced them to their lurking places, have studied their career and written their biographies. We know now, somewhat, where to find these secret foes, through what avenues they make their attack, and can in corresponding measure defend ourselves. But the system of defense involves a wider field of operations than the limits of a town or city, and a higher standard of official ability and special training than can reasonably be expected to be possessed by the average town selectman or village justice.

The exponent of practical hygiene in the future must be not only a physician and microscopist, but also a chemist, bacteriologist and geologist. All these sciences come into active demand in the exercise of the functions of a sound and efficient sanitary administration. It is quite obvious, from the rarity and character of these requirements, that they can not be economically employed separately and independently by small communities, living within limited areas of territory. Such communities would not often possess the men competent for such service, and would be unable to afford the remuneration which so high a standard of qualifications could justly demand. Moreover the principles of modern sanitary administration are of universal application, and therefore every consideration of expediency, as well as of economy, would lead to the utilization of acquired knowledge and trained skill by as large a constituency as is practicable.

It rarely happens that the health and well being of a town or even a community are dependent upon conditions which are wholly self-contained. In the great majority of instances, the sanitary state of a town or city is very largely at the mercy of things beyond its own boundaries. Those two great factors in public health, the sources of water supply and the means of sewage disposal, are seldom found wholly within the limits of any town and one or both, nine times in ten, must be sought for on territory not its own, but beyond the bounds of its jurisdiction. Nor only that, but the hygienic questions of most importance to the best success of these undertakings, require for their solution a larger experience and a wider range of knowledge than can ordinarily be found in a local health board. Besides these questions are to a considerable degree constantly recurring, not merely with reference to new enterprises, but in the care and proper maintenance of plants already established and in working order. Something above the average standard of attainments by local boards of health is requisite for the best management of most public undertakings of this kind, in which the general interests of all the towns and cities in a State are more or less concerned. When the general interest is so intimately connected, it follows without argument that whatever is best for the general welfare should so far as practicable be adopted. At least it is reasonable, that any one locality or community should be restrained by some authority from doing that which, selfishly designed solely for its own benefit, may be very disastrous to the welfare of other communities, or on the other hand be required not to neglect doing something essential to the welfare of itself and of other communities. It is without question the true policy of a State to provide for the best good of all its citizens, and most of the States in the Union have recognized that policy as regards health, by establishing State Boards of Health.

These State Boards are, indeed, charged with the duties of investigating the causes of disease, and especially of epidemics, the various effects upon health of localities, occupations, etc. They are required to advise regarding water supplies, systems of sewerage, the means of arresting the spread of contagious diseases and kindred subjects. This is very wise and judicious, but in some of the States, more particularly in the East, the best results are wanting, from the fact that after the State has provided the means of knowing what is the best thing to do in any given case, it has not provided any way of preventing communities from doing the worst thing instead of the best if they choose to. While the State thus admits the necessity of supplying to its citizens a sound and scientific standard of public hygiene through its State Board, it omits to insure the advantages which should follow, by neglecting to confer upon said State Board any authority by which local health officers may be held responsible for their observance of such standard. It is quite parallel to conducting a campaign against an invading foe, by directing the commander in chief of the army to instruct the colonels and captains upon the best plan of defense, and when and how they should dispose their respective commands, and then leaving it to the individual option of those officers whether they will be guided or not by such instruction.

Another forcible illustration of the need of making local health boards responsible for their official work, may be found in the management of local epidemics of contagious diseases. It is well known that by isolation and disinfection contagious diseases can be restricted. But the unsystematic, haphazard, half way efforts to accomplish these objects by the average town board of health seldom do any good, and the contagion goes whither it will, until the susceptible material in the community is exhausted and then the epidemic ceases spontaneously. While these constant failures to restrict disease by the appointed

officials may bring isolation and disinfection into public contempt, still isolation and disinfection remain the best and most effective means we know. It is not the means which should be in contempt, but the incompetent officials who know not how to use them. Where, in your experience, is the practice of disinfection satisfactorily performed by town boards of health? The absurdity of telling the family of the sick persons to burn some sulphur in the house, after recovery or death, (a very common thing to do) is but a silly caricature of real disinfection.

Public establishments for disinfection should exist in every community, and should always be in the charge of competent and intelligent men. Yet I will boldly venture the assertion that Connecticut is not the only State in the Union which is wholly unprovided with this most necessary and essential means of public safety. The only reason why disinfection stations are not established is the cost, but they are not so costly as epidemics.

Now, in conclusion, let me briefly outline the principle of sanitary administration which I have attempted to defend: the limit of this address will not admit of detail. Public sanitation is no longer the simple matter of half a century ago. It has become an elaborate system, involving in its practice an acquaintance with many branches of science. It has outgrown the comprehension of the town supervision, the town committee man or the town selectman. But the town by common consent is still the unit in sanitary administration, and the town health officer must still remain an essential factor in the system, only he must possess some qualifications for the office and can no longer be independent. The close relationship of towns, the intimate intercourse of their peoples by reason of modern facilities for rapid transit, produces in every town a direct interest in other towns, and other towns in like manner have an interest in it.

In a matter so important as the public health, this common interest demands that towns shall not continue to be irresponsible separate entities, doing or not doing at their option concerning affairs in which other towns are also deeply concerned. The town health officer shall have the necessary authority. It is not designed to abolish local self-government in sanitary matters, but to strengthen it and combine responsibility with it. Just as an individual may abate a nuisance on his own premises in his own way, but is liable for penalties if his way is not effectual, so local health officers should be responsible to a higher authority if they fail of their duty in the administration of sanitary laws in their own jurisdiction. I think the idea may be expressed in one sentence: in local matters concerning sanitation, let there be central supervision with authority; and local administration with responsibility.

GIFT TO THE CAMDEN MEDICAL SOCIETY.—At a meeting of the Camden City Medical Society, Colonel J. R. Johnson presented to the Society a large oil painting of the "First Dissection." Dr. J. M. Ridge made the presentation speech, and the painting was received on behalf of the Society by Dr. O. B. Gross. A rising vote of thanks was extended to the artist, after which a collation was served.—*Philadelphia Public Ledger.*

A CASE OF SYMPATHETIC NEURITIS AFTER EVISCERATION OF THE EYEBALL.

Read before the Section on Ophthalmology at the Forty-fourth Annual Meeting of the American Medical Association.

BY F. C. HOTZ, M.D.

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Evisceration of the eyeball was introduced by Prof. Graefe in Germany and Dr. Mules in England ten years ago as a substitute for enucleation, for the reason that it was a less dangerous operation and furnished better conditions for the artificial eye. The first report[1] on a larger number of eviscerations performed by Graefe seemed to sustain the favorable opinion of the originators; for among 240 eviscerations there was neither a death nor an instance of sympathetic inflammation after the operation.

But soon matters began to take a different aspect. Prof. Schuleck of Budapest, for instance, lost two patients among thirty-six eviscerations in the first week after the operation;[2] and Dr. Cross reported two cases of sympathetic ophthalmitis occurring after evisceration.[3] But as Dr. Cross had inserted a so-called artificial vitreous, it was maintained the sympathetic inflammation in these cases could not be charged to the operation, but was induced by the foreign bodies.

As no other instances seem to have been reported, I wish to present to the Section the following case in which the effects of the evisceration have not been modified or prejudiced by the introduction of an artificial vitreous, but in which two weeks after the operation an optic neuritis appeared in the other eye under circumstances which seem to warrant the opinion that we had to deal with a sympathetic affection:

Aug. 6, 1891, Frank S., 21 years old, bookkeeper, consulted me in regard to his eyes. When but two years old, he accidentally wounded his right eye with a pen-knife, the blade piercing the lower sclero-corneal border and passing through iris and ciliary ring into the vitreous. A very mild form of irido-cyclitis followed this injury; in two weeks the eye had apparently recovered and its external appearance was as perfect as that of its fellow; but the sight was gone. The boy grew up and went through the public school and the high school; and not for one single minute during his entire school life did this blind eye give him any trouble, though it had gradually become perceptibly smaller.

In the summer of 1888, it became troublesome for the first time, getting red and tender to the touch and making the other eye rather sensitive to the light, so much so that on some days it was almost impossible for him to do his bookkeeping although his sight always remained clear and strong. With the advent of cooler weather all these symptoms disappeared and during the next winter and spring he experienced no trouble, and could work over his books in daytime and read at night with perfect ease. But in the summer of 1889 the eye again became red and troublesome, and again the irritation subsided as soon as the weather grew cooler. The same thing happened in summer of 1890; and when the patient came to see me in August, 1891, the same trouble had been annoying him for two weeks past.

I found the right eye very small, red and quite sensitive to slight pressure; the left eye showed normal vision, refraction, and fundus; but it was a little sensitive to light and became quite red and watery after reading a few minutes. I told the patient in my opinion the proper thing to do in his case was to remove the offending atrophied eye. My advice was readily accepted; the patient went to the hospital where I eviscerated[4] the eye August 10. Chloroform

[1] Dr. Bunge Ueber Exenteration des Anges, 1887.
[2] Otto Becker, enucleation and exenteration, 1888.
[3] British Medical Journal, July, 1887.
[4] I decided on evisceration for cosmetic reasons. This operation is said to yield a larger stump than enucleation; and inasmuch as the growth of the right orbit had been retarded and would allow the insertion of a small artificial eye only, I thought the larger stump might give the small glass eye a fuller appearance by preventing its sinking back into the orbit and therefore be of some real cosmetic value to my patient.

was administered; the face had been thoroughly scrubbed with soap and water; the eyelids, eyeball and conjunctiva were washed with sublimate solution 1 to 5000; all the instruments were first immersed in 95 per cent. carbolic acid, then treated with boiling water and kept in sterilized water till the end of the operation. The eyeball was opened by a circular incision just behind the sclero-corneal border; the retina was found completely detached and "chorded;" and the choroid was easily separated from the inner surface of the sclera by a flattened scoop. The posterior portion of the choroid was calcareous. When every trace of the contents was removed, the inner surface of the sclera was washed with carbolic acid and dusted over with iodoform; and the conjunctiva drawn over the scleral wound and brought together by a purse-string suture. The eye was once more washed out with the sublimate solution and dressed with borated cotton and sterilized bandage.

August 11.—Violent headache; great lid swelling and much chemosis of conjunctiva; bloody serum has been and still is oozing from the stump.

August 13.—Patient still in bed; the pain in the head is decreasing; no more oozing from stump since yesterday.

August 20.—No more headache since two days, only a dull pain over right eye; swelling of upper lid gone, but still considerable chemosis of conjunctiva; stump large and firm. Patient is allowed to go home but is advised to abstain yet from reading. The left eye has been free from the photophobia since the operation and appears well in every respect.

August 29.—Patient calls at the office; the dull pain over the right eye has continued all the time; the conjunctiva is still swollen and pressure on the stump causes deep seated pain in the orbit. Since two days the patient has noticed the left eye was getting sensitive to light again, and on pressing on the eyeball he felt a dull pain back of the eye, and since this morning he observed a peculiar unsteadiness of vision; he sees everything very distinctly at first but only for a moment; for instance, when looking at the test types he can read No. xx; but the letters gradually seem to fade away and then come back. No redness; pupil active; vision clear; but papilla seems redder than at previous examinations.

September 1.—Unsteadiness of sight more annoying; V = 20-20; papilla decidedly hyperemic. Pain and tenderness of stump still present. Hot water compresses ordered on stump; and calomel internally, gr. $\frac{1}{4}$, three times daily.

September 4.—V. 20-30 only; papilla very red, and its nasal border veiled by a gray mist which extends a short distance over the adjacent retina.

September 9.—V. = 20-40; papilla still more indistinct. Pain and tenderness of the stump of right eye has been much less these two days.

From this day on the eye began to improve and by October 1, it had regained normal and steady vision (20-20); the papilla showed normal color and well defined border.

December 1.—Patient called to see about wearing an artificial eye; the stump of the right eye was so shrunken by that time that it showed no essential difference from the stump after enucleation. He had been at his work the past four weeks and experienced no trouble with his eye. And on inquiry I learned that during last summer and autumn he had no return of his eye trouble.

Remarks:—The history of this case, I think, leaves no room for doubting the sympathetic nature of the disturbance of the left eye; and I also think the clinical evidence is sufficiently clear to point out the important and significant difference in the character of the sympathetic disturbance before and after the evisceration. We have seen that for several years the left eye had been troubled by periodical attacks of photophobia, accommodative asthenopia and irritability unquestionably induced by the tender state of the atrophic right eye. But for all these several attacks and though the last attack immediately preceding the operation had lasted two whole weeks we have found the vision still unimpaired and the fundus in a normal condition, and therefore come to the conclusion that these attacks preceding the evisceration were due to *sympathetic irritation* which was promptly relieved by removing the exciting cause in the right eye (its degenerated contents).

The right eye remained perfectly quiet after the evisceration for the next seventeen days when it again became sensitive to light and reading; but this time the vision soon became impaired and the ophthalmoscope disclosed the signs of a rapidly progressive optic neuritis. This neuritis had certainly no connection with the sympathetic irritation which preceded the evisceration; for we know sympathetic irritation never leads to sympathetic inflammation. But when we consider what occurred in and about the right eye during these seventeen days after the evisceration, I think, we may find the cause of the neuritis of the left eye. The operation was followed by great swelling of the lids and conjunctiva and by severe pain extending from the right eye over the whole right side of the head; after ten days this violent headache subsided into a dull continuous pain over the right eye which with the chemosis of the conjunctiva lasted nearly two weeks longer.

In these symptoms we have the evidence of an acute inflammation which proceeded from the eviscerated eye. This inflammation probably followed the tract of the optic nerve to the chiasma, there invaded the optic nerve of the left eye and following its tract down to the eyeball finally produced the ophthalmoscopic evidence of neuritis in the papilla of the left eye. In this way I think the optic neuritis in our case was developed and, therefore, may justly be looked upon as the after effect of the evisceration. This opinion is materially strengthened by the fact that the neuritis in the left eye did not begin to subside until all signs of inflammation in the right eye had disappeared. And when we consider the fact that a violent and prolonged irritation after evisceration such as we have observed in this case, is not an unusual occurrence; when we know[5] it occurs after smooth and easy operations as well as when the evisceration has been difficult and tedious, it must be admitted that even the most carefully executed evisceration creates conditions which may possibly lead to sympathetic inflammation, and that in this respect evisceration appears a less safe operation than enucleation.

In the after effects evisceration compares very unfavorably with enucleation. After the latter operation the patient seldom suffers much, and may be discharged from the hospital in three to four days. After evisceration great pain is the rule, as we have seen, and the recovery is very slow; Dr. Bunge found in 240 cases nine days; Dr. Hecht in Schweigger's Klinik found in thirty-seven cases ten and two-fifth days the average time which the patient had to remain in the hospital.

It is claimed in favor of evisceration that it leaves a larger, more movable stump and thus furnishes better conditions for the movements of the artificial eye. This alleged cosmetic advantage seems to be generally conceded, and yet on closer examination it turns out to be all a myth. In order to obtain some accurate information in regard to the apparent movements of the artificial eye I measured its outward and inward rotations by the perimeter in the same way as we determine the degree of convergence or divergence in strabismus. I told the patient to look as far as he could to the right and found out at which angle of the perimeter the candle light was reflected in the center of the cornea of the glass eye; and then I made him turn his eyes as far

[5] Dr. Bunge, Exenteration, p. 64.

to the left as he could and again measured by the light reflex on its cornea the position of the glass eye. As the artificial eye follows as well as it can the rotations of the natural eye, I believe these measurements thus obtained represent the extreme limits of motion the artificial eye was capable of in every case. The results of my tests are given in the following instructive table:

PERIMETRIC MEASUREMENTS OF THE LATERAL MOVEMENTS OF ARTIFICIAL EYES.

PATIENT'S AGE.	STUMP.	WHEN OPERATION WAS PERFORMED.	DEGREES OF ROTATION.	
			INWARD.	OUTWARD.
L. S., ...45	Enucleation . .	10 years ago.	15	25
F. S., ...21	Evisceration. .	3 months ago.	20	20
A. C., ...21	Enucleation . .	1 year ago.	15	15
Mrs. M., ...26	Evisceration . .	4 months ago.	15	25
Mrs. E., ...50	Enucleation . .	5½ months ago.	20	25
G. L., ...24	Enucleation . .	1 month ago.	20	20
M. J., ...42	Atrophic Eye .	20 years ago.	10	15
L. H., ...22	Enucleation . .	6 weeks ago.	15	30
Mrs. L., ...20	Atrophic Eye .	10 years ago.	15	30

These measurements show there is absolutely no difference in the extent of the lateral movements of the glass eye, worn on an evisceration stump, and that worn on an enucleation stump; in either case the inward movements (adduction) varied between 15 and 20 degrees and the outward movements (abduction) between 15 and 25 degrees. These results were not surprising to me; for though I have heard so much about the larger, better stumps gained by evisceration I have found these stumps shrink away so much that three months after the operations there is no more of them left than what we find after a suppuration of the globe, and that it is difficult to tell by the stump whether enucleation or evisceration has been performed. This observation I have made not only in my own cases but also in eyes which had been eviscerated by other surgeons.

But even granting a larger permanent stump to the evisceration, I still maintain the artificial eye does not gain any material advantage by it. The largest and best movable stumps, superior to any furnished by evisceration, undoubtedly are those slightly atrophic eyeballs with well preserved vitreous, but complete loss of the cornea and iris (as the result of sloughing or surgical operation). Glass eyes can be worn over such atrophic globes, but they do not show any superior mobility. In my table there are two such cases; and we see that the one shows an unusually limited movement; and the other (the last in the list) shows no better adduction (15 degrees) than we get by enucleation or evisceration cases and exceeds their best abduction by 5 degrees only. These atrophic eyeballs had an excellent range of lateral rotation; and if the artificial eye could be cemented onto the atropic globe it would, of course, follow the rotations of the latter, and the cosmetic effect would be perfect, because the artificial cornea would describe lateral rotations as perfectly as the natural cornea. But as the artificial eye is not fastened to the stump, the latter does not impart its motions to the super-imposed glass shell and the axis of rotation of the glass eye lies much in front of the stump. When, therefore, the glass eye seems to turn to the right or left, its cornea shows very little real lateral movement, its principal motion being a rotation on its vertical axis so that its center faces to the right or left. On this account the movements of an artificial eye will always be confined to narrow limits, whether the glass shell be inserted after enucleation or evisceration.

If I sum up all the clinical facts, I should say evisceration has nothing to show in its favor, while it compares decidedly unfavorably with enucleation in the frequent violent reaction and slow recovery, and therefore does not deserve to take the place of enucleation.

PANOPHTHALMITIS—FATAL MENINGITIS FOLLOWING ENUCLEATION OF THE EYE.

Read in the Section on Ophthalmology at the Forty-fourth Annual Meeting of the American Medical Association.

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John M., age 47, but appearing at least 67, presented himself at the Wills Eye Hospital Dec. 12, 1892, bearing a letter from his physician, Dr. D. T. Lainé of Media, Penn., under whose care he has been for a severe attack of iritis in the left eye. The disease proving rebellious, he was advised to seek hospital treatment. He was in feeble health, suffering from severe pain in the eyeball and with violent left hemicrania; vision was reduced to quantitative perception of light. There was deep ciliary injection, small pupil, slight haze of the cornea and the remnant of a blood clot was still lying in the lower angle of the anterior chamber. There were numerous posterior synechia and dilated blood vessels could be seen coursing over the surface of the iris. Tension was normal but the anterior chamber shallow. He was placed in bed, blood extracted from the left temple and calomel and soda purge given, eserin being instilled locally. He experienced very prompt relief and one week later vision was somewhat improved, the blood clot absorbed, and the ciliary injection less marked but no view of the fundus could be obtained. There was simply a gray-red reflex from the pupil. When seen two days later, there was a fresh red blood clot lying in the pupil and on the upper and inner pupillary rim of the iris and a large blood vessel could be seen entering it from which the blood was apparently issuing. As yet there was no pain, but the hemorrhage was soon followed by decided increase of tension and the ball became tender to pressure and with it his headache returned. He lost appetite, became sleepless and the general health rapidly declined. Under a careful regimen, however, the health improved, the blood clot once more absorbed and the eye became quiet but showed a tendency to frequent recurrences of increased tension and ciliary redness. During one of the intervals of freedom from acute symptoms a broad iridectomy was made upward. The iris was found friable; the operation was smooth and successful, but bleeding was profuse and the eye was bandaged with the anterior chamber filled with blood. There was no undue reaction and the blood clot slowly absorbed, but the wound refused to heal. In ten days there was a pouting black mass lying in the wound, but slightly elevated above the corneal limbus, and occupying the entire line of incision. The operation was done under antiseptic precaution and the eye was subsequently kept bandaged, being thoroughly washed with bichlorid solution at each dressing and dusted with iodoform. There were no visible signs of suppuration but his health steadily failed, his hands were hot and there was a hectic flush on his ckeeks, but only slight if any rise in his temperature. The eyeball was soft; there was no dread of light and no pain or headache. He was greatly depressed in spirts, felt that he was going to die and begged to be allowed to return to his home. The eye was then enucleated on Jan. 25, 1893, and found filled with pus. The nerve was severed well back, the orbit thoroughly drenched with bichlorid of mercury solution, well dusted with iodoform and bandaged for twelve hours. He made a rapid and favorable recovery without suppuration of the stump. The infiltration of the tissues of the orbit absorbed rather more slowly than usual but his health rapidly improved so that on the fourteenth day, February 7, he was discharged from the hospital apparently well, certainly with no symptoms to awaken apprehension regarding his future. One week later, February 15, twenty-one days after the excision of the eyeball, he sent for his physician, Dr. Lainé, but in his absence

was seen by Dr. J. H. Fronfield, to whom I am indebted for the following history: He complained only of weakness and disgust for food, the temperature was normal and throughout the subsequent history, remained either normal or sub-normal; although taken twice daily at no time was there any rise. There was at this time some suppuration of the stump, he was anemic, the tongue pale, large, flabby and indented. He was not considered seriously ill. Calomel and soda were prescribed to move the bowels and he received an elixir of iron, quinin and strychnia as a tonic.

February 18, 10 A. M. Bowels have been freely moved but can not take the tonic. Urine free from albumen. 7 P. M. Decidedly weaker; very melancholy; is sure he will die. No pain in the eye; pupil reacts promptly.

February 19. In bed; very drowsy; is aroused with much difficulty; rapid pulse; reflexes are normal. The right eye shows no muscular deviation; there is no ptosis or dread of light. There is no increased suppuration of the stump and no swelling of the orbital tissues; respiration very irregular, at times normal and then extremely rapid, subsiding once more to normal. No tenderness of the spine; hearing good; no pain and no vomiting. Obstinate constipation.

February 20. Only partially aroused and that with great difficulty and lapses immediately into unconsciousness. The head is drawn backward. From this time he remained in a state of profound corna with irregular breathing and the backward traction of the head developed into marked tonic opisthotonos, the man resting upon his heels and head until the 26th when he died.

No autopsy could be secured. At my request Drs. G. C. Ellet and W. R. Parker, resident surgeons at the Wills Eye Hospital, made for me a careful examination of the excised ball, and I append their report: "In the region of the corneal wound the epithelium has proliferated considerably and the superficial layers of the cornea are thickly infiltrated with round cells. There is no union of the lips of the wound, the space between them being occupied by iris tissue covered with organizing inflammatory products. The iris is pushed forward, adherent to the cornea by heavy organizing bands in the neighborhood of the wound, the anterior chamber being reduced to a slit. The portion of the iris which is not prolapsed is covered with a layer of lymph and pus, and where the pupillary space is visible it is filled with a heavy membrane continuous with that in the iris. This is continued backward on the under surface of the iris, filling the posterior chamber, and passing with a mass of pus which fills the vitreous chamber. The ciliary body seems but little affected, but the retina and choroid are thickly infiltrated with pus as far anteriorly as they can be identified. The inner layers of the sclerotic are also attacked. Further back, the retina is lost from the specimen. Toward the posterior part of the eye the choroid is represented by a thick layer of pus thrown into folds, and stellate pigment cells scattered through it serving to identify it as choroid, none of the vascular structures being visible. The optic nerve is in a state of inflammation, the round celled infiltration being pronounced as far back as the specimen shows. A few lymph corpuscles are present in the nerve. There are no changes in its vessels."

Dr. Fronfield's careful report leaves no room for question but that this man's fatal illness was due to cerebro-spinal meningitis. The consideration of great interest to the ophthalmic surgeon is its possible relation to his suppurative panophthalmitis and the enucleation of the eyeball. The exact character of the intracranial lesion must, in the absence of an autopsy, remain in doubt.

Two possible explanations are at hand: first, that the meningitis was a mere coincidence, having no relation to the ocular conditions; the other, that the fatal meningitis was infectious and that it was set up by germs conveyed through the cut tissues and open vessels in the orbit to the membranes and venous sinuses of the brain. It would be a comforting view of the case could we feel assured that the first proposition was a correct solution of the unfortunate sequel.

The very close relation that exists between the eyeball and the intracranial mass would lead us to anticipate serious danger to life from its excision. Such expectation would moreover be greatly strengthened by the frequency with which we observe ocular disease as secondary to disease of the brain and its membranes. But however frequently we may witness ocular disturbances as secondary to intracranial inflammations, experience shows that the reverse is extremely rare, except in the case of malignant disease. Furthermore it has been shown by ample experience that excision of the eyeball is fraught with but little danger to the patient. That it is not entirely devoid of danger to life, however, is evidenced in the fact that there have been forty-six reported cases of meningitis, forty-two of which proved fatal. Four of these, all fatal, should possibly be excluded as having been subject to malignant disease.

These cases have been again and again tabulated and reviewed, so that it is not necessary for me to go over this well-known field again, except to add to the number already known. Individual cases were collected by Nettleship to the number of thirty-four in 1886, (Transactions Ophthalmological Society United Kingdom 1886) including a case occurring in his own hands at the Moorfields Hospital, and which he made the basis of an admirable review of the subject. In the discussion which followed, McHardy reported two cases of fatal meningitis following the removal of the eyeball, and a third where the meningitis and death followed suppurative panophthalmitis, the ball having been freely opened but not removed. Dr. Joseph A. Andrews, in the *New York Medical Journal*, Dec. 29, 1888, has again tabulated the cases, omitting the four non-fatal cases of Nettleship and adding others finding thirty six fatal cases. My own case here reported, Mr. McHardy's two cases and three others occurring in the practice of my colleagues in Philadelphia but not heretofore reported make a total of forty-six cases of meningitis following enucleation.

H. D. Noyes, M. D., has again briefly reviewed the subject in the Transactions American Ophthalmological Society for 1888–89, with the intention of studying the dangers attending excision in suppurative panophthalmitis. He there collects 3,742 enucleations at the various clinics with but one death, and suggests that the deaths which have occurred are probably about one for 4,000 enucleations. There have, however, been 1,131 enucleations at the Wills Hospital in Philadelphia in twenty years, eighty-five of which are recorded as for suppurative panophthalmitis, and one death here reported. Three of my colleagues report each one case of fatal meningitis as having occurred in their practice there during the years mentioned, but no details of them could be found on the hospital records by the House Surgeon, Dr. Parker who kindly went over the books for me. This would make a total of 4,873 enucleations and five deaths if these three cases and my own are included. On the other hand, there has been no case of meningitis at the large clinical service at the

University Hospital since it was established. In any case it is plain from these figures that the operation for excision of the eyeball is more free from danger than one would expect, having in view its critical anatomical relations.

The fear which is entertained regarding the danger from the excision of suppurating balls, moreover, does not seem to find support by reviewing the testimony furnished by the reported cases, since only half of the cases, where the point is mentioned were suppurating eyes. This statement, it is true, loses some of its force by the fact that the teaching of von Graefe as to the danger to be apprehended from excising suppurating eyes has doubtless had a restraining influence over the practice of surgeons in such cases. The fact that the excised eye had been opened, either by accident, operation or inflammation, as pointed out by Nettleship, seems to be of more significance than the presence of visible pus, for in a large majority of all the cases where the history is sufficiently complete to determine the point, the eyes had at some time been opened.

In the study of my own case here reported, in the light of the published experiences one finds much confusing testimony. In the first place the length of time which intervened between the excision and the onset of the meningitis favors the view which would regard the meningitis as a coincidence. The longest time heretofore reported is eight days while in mine it was twenty-one days. The rapid recovery, without orbital inflammation, together with his great improvement in general health immediately after the operation all seem to point strongly against any causal relationship between the enucleation and the meningitis.

A very important inquiry at this point is as to the possible secondary nature of the eye disease. In reviewing the man's history it now seems possible, if not probable, that his severe headache and impaired health may have been due to a low grade of meningitis, and that I was at fault in regarding the head symptoms as entirely due to his severe eye disease. Although I did not suspect any cerebral complication, nevertheless the treatment directed for his relief viz.:—local blood letting, the calomel and soda purge, potas. iod. et. bromid, and later mercurial inunctions were well devised to relieve a meningitis had they been directed with that purpose in view. Certainly they afforded him prompt relief from his very severe pain both in head and eye.

The absence of orbital symptoms at the onset of the meningitic symptoms affords but little comfort, since in only four of the cases as far as I can find was there any inflammation or irritation of the orbital tissues present, while in many more it is distinctly stated that no connection could be traced. The inflammation of the optic nerve and its sheaths is noted in four cases, three of which are the same as noted with orbital inflammation. The report of Drs. Ellet and Parker shows that in my case also the optic nerve was in a state of active inflammation as far back as the specimen extended. Whether this process had invaded the eye from within the cranium or had invaded the brain from the eye must forever remain in doubt. I am free to say that I incline to the first, for the reason besides those already stated that the symptoms which ushered in the fatal illness were the same as those I had observed in the hospital before the excision.

It must be remembered, however, on the other hand that all the conditions were here present which have in these cases seemed to favor the production of this disease. There was the inflamed and suppurating ball, and more than all a ball which had been recently opened, a condition, as has already been pointed out, which was present in nearly all of the reported cases where it was mentioned at all.

INTRA-OCULAR INJECTIONS OF SOLUTIONS OF VARIOUS ANTISEPTIC SUBSTANCES; AN EXPERIMENTAL INQUIRY.

Read before the Section on Ophthalmology, at the Forty-fourth Annual Meeting of the American Medical Association.

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A number of researches have been published concerning the effect of the introduction of various substances, solid and liquid, into the vitreous chamber. These may be summarized as follows:

1. The introduction into the vitreous of foreign bodies (pieces of wire, lead, glass, etc.), or of irritating liquids (croton oil, tincture of iodin, etc); 2, the injection of sterilized blood into the vitreous humor; 3, intra-ocular injections of various antiseptic liquids.[1]

Researches belonging to the first class, from the time of the publication of Pagenstecher's essay on the pathology of the vitreous[2] to Leber's superb work,[3] are chiefly concerned with the behavior of the vitreous towards these foreign substances, and with the complex problems which surround the pathology of inflammation. Researches of the second class, which date from the imperfect experiments of Legros,[4] to the thorough investigation of the subject of blood injections into the vitreous by Pröbsting,[5] have been undertaken to study the deportment of the retina under these circumstances, and to add to our knowledge of the mechanism of retinal detachment and the production of proliferating retinitis. Researches of the third class have been conducted chiefly to test the therapeutic value of the injection of antiseptic fluids directly into the vitreous of an inflamed eye; for example, one suffering from hyalitis, or from sympathetic ophthalmitis, or to try their efficacy in preventing an inflammation of this character after the eye has been exposed to the influences likely to produce it.

Abadie,[6] in 1890, suggested the propriety of injecting 2 drops of a solution of sublimate, 1 to 1000, into a wounded eye which has caused sympathetic ophthalmitis of the other eye, which should also be treated with a similar injection directly into the vitreous humor. According to him, these injections were of use in checking and ameliorating the inflammatory process. Subsequently he published[7] three

[1] Experiments to determine the effects of injections into the anterior chamber, for example those performed by Nuel (Revue Générale d'Ophthalmologie, T. viii, 1889, p. 342) do not belong to the present classification. As Dr. Berry pointed out, injections into the anterior chamber and into the vitreous can scarcely be compared.

[2] Archives of Ophthalmology, Vol. I, p. 500.

[3] Die Enstehung der Entzündung und die Wirkung der Entzündungerregenden Schädlichkeiten. Leipzig, 1891, p. 177 et seq.

[4] Journal de la Anatomie et de la Physiologie. 1873.

[5] Archiv f. Ophthalmologie. Bd. xxxviii. Abt. III. 1892, p. 114.

[6] Pathogénie et nouveau Traitement de l'Ophthalmie Sympathetique. Annales d'Oculistique, Vol. cviii, 1890, p. 188.

[7] Nouveaux cas d'Ophthalmie Sympathique, Guéri par les Injections intra-oculaires de Sublimé. Annales d'Oculistique, Vol. civ, 1890, p. 229.

cases of sympathetic ophthalmitis cured by intra-ocular injections of corrosive sublimate, the strength of the injections being in two instances 1 to 1000 and in one 1 to 500.

In the discussion of a paper communicated by Darier, Abadie's Chief of Clinic, to the French Society of Ophthalmology, on the 8th of May, 1891,[8] concerning sub-conjunctival injections of sublimate in ocular therapeutics, the question of intra-ocular injections of the same drug received attention, Wecker regarding the transition from intra-ocular to sub conjunctival injections as a decided advance, and doubting the efficacy of the former method of administration. In the close of the discussion, Abadie expressed himself as willing to abandon the intra-ocular injections of sublimate for sub-conjunctival injections, provided it is demonstrated that they are more efficacious, inasmuch as certain observers have doubted their efficacy and, moreover, have not merely been disappointed in their results, but have seen positive harm follow.

Occasionally reports of successes from the use of Abadie's treatment of migratory ophthalmitis have appeared in the journals; for example, Baquis[9] reports a remarkable case of this character: a woman aged 26 years sustained an injury of the left eye, resulting in an adherent leucoma. At the end of three months chronic irido-cyclitis produced sympathetic ophthalmitis in the left eye. The author then injected 3 drops of a sublimate lotion, 1 to 500, into the sympathizing eye. Marked improvement occurred. At the end of eight days the injection was repeated, but there were also twelve mercurial frictions, which caused the absorption of the exudates in the pupillary field, showing that there was an intense neuro-retinitis in the sympathizing eye. At the end of six months the cure continued. This author states that he was encouraged to use Abadie's method, not only by the results obtained by the reporter, but on account of the researches of Dr. Ovio of Padua, on the intra-ocular circulation and the nutrition of the vitreous. This experimenter definitely asserts that weak sublimate lotions may be injected into the vitreous without causing chronic lesions, and without causing the vitreous to diminish in any way the microbicidic power of the sublimate lotions, no matter how weak they may be.

Darier[10] states that he has experimented in 1889, on rabbits with the intra-ocular injections of "various substances," and that in studying daily the modifications produced by the substances on the vitreous body and the deep membranes of the eye, he was struck by observing how promptly the solutions thus introduced were absorbed without causing excessive disturbance, provided they were very dilute. The character of the substances is not described in the paper to which reference has been made.

At a meeting of the Ophthalmological Society of the United Kingdom, Nov. 10, 1892, Berry[11] gave an account of some facts elicited by experiments on rabbits, undertaken by his assistant, Dr. Chassaud, with the object of ascertaining the effect of different solutions injected into the vitreous. Unfortunately the details of these experiments are not at hand, but in the abstract given the following results are recorded: in some cases, before injecting the antiseptic, the vitreous was inoculated with fresh septic pus. The only substance injected after inoculation which seemed capable of preventing purulent hyalitis was chlorin water, and this injection was better tolerated by the retina and vitreous than other strong antiseptic fluids. In two cases of purulent hyalitis in man, chlorin water injected into the vitreous led to immediate improvement and the eyes were saved, although sight had been lost before treatment was adopted. In the discussion which followed, Griffith suggested the propriety of the use of trichlorid of iodin as an intra-ocular injection—an antiseptic, as is well known, which has been much lauded by Pflüger and others in France. Berry expressed the belief that the use of intra-ocular injections was a distinct advance in ocular therapeusis, and Mr. Hartridge, referring to cases which frequently occurred where the injection of a germicidal solution was evidently indicated, thought that if this method could be demonstrated to be a safe one, a very desirable addition to occular therapeutics would be made.

Therefore, both from the clinical and the experimental standpoint, it is desirable to add new data. Those which I present are entirely experimental and comprise:

1. The injection into the vitreous chamber of rabbits of various antiseptic substances, namely, bichlorid of mercury, 1 to 500, 1 to 1,000 and 1 to 5,000 respectively; cyanuret of mercury 1 to 1,000; aqua chlorinata, officinal strength; blue pyoktanin 1 to 1,000 and trichlorid of iodin 1 to 1,000.

2. The injection into the vitreous chamber (dogs and rabbits) of an emulsion of staphylococcus pyogenes aureus of the sixth generation, and after the development of purulent hyalitis the injection of antiseptic fluids (bichlorid of mercury and aqua chlorinata).

3. The simultaneous injection of the staphylococcus emulsion aud the antiseptic fluids.

FIRST SERIES.

Experiment 1.—2, 8, 1893. Full grown, slate-colored rabbit. Five minims of bichlorid of mercury solution, 1 to 500, injected into the vitreous. 2, 9, 1893. Vitreous cloudy, and at the upper portion somewhat in the position of the injection, a large, dark cloud and a smaller detached one lower down. 2, 20, 1893. No change in the permanent lesion of the vitreous.

Experiment 2.—2, 17, 1893. Full grown, black rabbit. Five minims of bichlorid of mercury, 1 to 1,000, injected into the right vitreous; 2, 20, 1893. Vitreous cloudy. 2, 24, 1893. Vitreous entirely opaque; practically no reflex from the fundus; 3, 1, 1893. Rabbit killed and eye placed in Müller's fluid.

Microscope.—Choroid edematous; retina practically indistinguishable, being merged into a tissue composed of round and oval cells, well developed fibers and blood channels, through the outer layers of which are freely scattered oval and round densely pigmented cells. Additional areas of blood corpuscles and patches of granular débris are visible.

Experiment 3.—2, 17, 1893. Full grown, white-nosed Maltese rabbit. Five minims of bichlorid of mercury, 1 to 1,000, injected into the right vitreous. 2, 20, 1893. Large, greenish-white cloud occupying vitreous. 2, 24, 1893. Similar appearances, giving somewhat those presented by connective tissue formation in vitreous. 3, 6, 1893. Eye removed and placed in Müller's fluid. Ophthalmoscopically the vitreous was occupied by a huge whitish mass covered with reddish spots, probably hemorrhages, and giving the impression of extensive detachment of the retina.

Microscope.—Fine granular débris in anterior chamber; remains of vitreous granular, but no connective tissue

[8] Des Injections sous—conjunctivales de Sublimé en Thérapeutique oculaire. Arch. o'Ophthal. Vol. xi, 1891 p. 449.

[9] Annali di Ottalmologia, Vol. xxi, fasc. 4 et 5, Abstr. Arch. d'Oph. December, 1892, p. 781.

[10] Des Injections sous—conjunctivales de Sublimé. Annales d'Oculistique, T. civ., Avril, 1893, p. 242.

[11] Intra-ocular Injections of Antiseptic Solutions. Ophthalmic Review, December, 1892.

formation. Choroid imperfect and detached (section, however, broken somewhat, hence possible fault in technique); retina extensively detached, in places normal in structure, but in others proliferation of Mueller's fibers (connective tissue framework) passing into vitreous and forming a delicate network of fine fibers. (Compare results obtained by Probsting loc. cit. page 139.) The lesions are analogous to proliferating retinitis.

Experiment 4.—2, 17, 1893. Full grown, gray rabbit. Five minims of bichlorid of mercury, 1 to 5,000, injected into the right vitreous. 2, 20, 1893. Large, dark cloud occupying vitreous. No change before rabbit's death, four days later.

Experiment 5.—5, 5, 1893. Full grown, buff-colored rabbit. Two minims of bichlorid of mercury, 1 to 500, injected into left vitreous. Immediately afterwards two air bubbles and a small circular cloud visible with ophthalmoscope. 5, 9, 1893. Dark opacity in the vitreous up and out, stationary, and resembling a fly's wing. The rest of the vitreous clear. 5, 11, 1893. Opacity in the vitreous unchanged. 5, 17, 1893. Previously described opacity remains stationary. Slight general haze in the vitreous. 5, 29, 1893. Rabbit dead. No change in the opacity.

Experiment 6.—Large, buff-colored rabbit (pregnant). Two drops of bichlorid of mercury, 1 to 500, injected into the left vitreous. Immediately afterwards a dark streak marking the track of the needle, a small dark cloud just in the center of the vitreous. 5, 9, 1893. Circular opacity in the vitreous with small, central spot. The rest of the vitreous clear. 5, 11, 1893. The large circular opacity, with a smaller dark center described in previous note unchanged. The remainder of the vitreous clear. 5, 17, 1893. Opacity in the vitreous of dense white color, shaped like two superimposed rings; rest of vitreous clear. 6, 1, 1893. No change in previously described opacities. Rabbit killed and eye placed in Müller's fluid; not yet examined.

Experiment 7.—2, 17, 1893. Full grown, black rabbit. Ten minims of aqua chlorinata injected into left vitreous. On withdrawing syringe a large bleb appeared beneath the conjunctiva, and the vitreous seemed to be filled with a cloudy substance and several air bubbles. 3, 6, 1893. Extensive clouding of the vitreous, with probable detachment of the retina. 3, 20, 1893. Eye placed in Müller's fluid; no change, other than deepening of opacity, having occurred.

Microscope.—Choroid for the most part in place, but edematous, prolapse at point of entrance of needle. Retina extensively detached and scarcely recognizable, being associated with a band of tissue fiber and round and oval cells and inflammatory material extending from nerve entrance to anterior portion of eye.

Experiment 8.—2, 17, 1893. Full grown, white-nosed Maltese rabbit. Ten minims aqua chlorinata injected into left vitreous. 3, 6, 1893. Vitreous has remained clear; that is, there have been no dark opacities or white infiltrations, and the eyeground is visible without apparent change in the retina. 3, 20, 93. Eye placed in Müller's fluid, but not yet examined.

Experiment 9.—2, 17, 1893. Full grown, gray rabbit. Ten minims of aqua chlorinata injected into left vitreous. 3, 6, 93. Extensive white clouding of the vitreous, and probable detachment of the retina. 3, 20, 1893. Eye placed in Müller's fluid, but not yet examined.

Experiment 10.—3, 8, 1893. Full grown, white and gray rabbit. Ten minims of aqua chlorinata injected into right vitreous. 3, 11, 1893. Cornea hazy and no view of fundus. (Probable contamination from imperfect sterilization of needle.

Experiment 11.—3, 8, 1893. Full grown white and gray rabbit. Five minims of aqua chlorinata injected into right vitreous. 3, 11, 1893. Large, greenish-white opacity well forward in the vitreous, giving the appearance of an old detachment of the retina, and connective tissue formation in vitreous. No change before rabbit's death, three days later.

Experiment 12.—3, 8, 1893 Full grown white and gray rabbit. Ten minims of aqua chlorinata injected into right vitreous. 3, 11, 1893. Large greenish-white opacity obscuring the entire vitreous. Eye removed and placed in Müller's fluid.

Microscope.—Retina and choroid for the most part in place and of fairly normal appearance, but well forward on right side a circumscribed detachment of retina, the space between retina and choroid being filled with a granular material (coagulated vitreous) containing a number of hypertrophied vitreous cells.

Experiment 13.—4, 17, 1893. Full grown black rabbit. Ten minims of aqua chlorinata injected into right vitreous. Immediately afterwards a large air bubble surrounded by a dark cloud. 4, 20, 1893. Circular white opacities and still some air bubbles present in the vitreous. 4, 28, 1893. Several large, white opacities hanging in the vitreous surrounded, however, by clear vitreous, permitting a view of the fundus. No hemorrhages in the retina and no detachment. 5, 9, 1893. Practically no change from note under 4, 28, 1893. 5, 17, 1893. Irregular, dense, white opacities scattered throughout the retina, between which the fundus is dimly seen, with evident patches of choroiditis down and out. 6, 1, 1893. No change from above. Eye removed and placed in Müller's fluid, but not yet examined.

Experiment 14.—4, 17, 1893. Full grown black rabbit. Ten minims of aqua chlorinata injected into right vitreous. Immediately afterwards numerous air bubbles surrounded by a cloud. 4, 20, 1893. Streaks of dark opacity and clouding the vitreous, partially obscuring the fundus. 5, 4, 1993. Entire vitreous opaque and whitish. Lens beginning to be cataractous. 5, 9, 1893. Diffuse opacity of the entire vitreous, presenting the general appearance of a white cataract. 5, 11, 1893. Eye removed and placed in boro-glycerin, but not yet examined.

Experiment 15.—2, 20, 1893. Full grown white and gray rabbit. Five minims of cyanuret of mercury, 1 to 1,000, into right vitreous. 2, 24, 1893. Vitreous cloudy and eyeground invisible. No change before rabbit's death.

Experiment 16.—2, 20, 1893. Full grown white and gray rabbit. Five minims of cyanuret of mercury, 1 to 1,000, injected into right vitreous. 2, 24, 1893. Vitreous cloudy and streaked, but appearances of whitish masses and detachment of the retina lacking. No clearing of vitreous before the rabbit's death, three days later.

Experiment 17.—Five minims of cyanuret of mercury, 1 to 1,000, iniected into left vitreous. Immediately afterwards dark streaks in vitreous and several air bubbles. 3, 11, 1893. Vessels of the retina visible, but the vitreous hazy and streaked. Rabbit dead two days later, without change.

Experiment 18.—3, 8, 1893. Five minims of cyanuret of mercury, 1 to 1,000, injected into left vitreous. Immediately afterwards dark streaks in vitreous and several air bubbles. 3, 11, 1893. Vitreous shows large, greenish-white opacity obscuring the fundus. Eye removed and placed in Müller's fluid.

Microscope.—Choroid edematous; retina much broken and detached, due to imperfect technique; typical prolapse of choroid into wound made by entrance of needle. The internal portion of the puncture is closed with granular pigment cells from the choroid; beyond is a tissue composed of round and oval cells (granulation tissue) capped at the scleral orifice with pigment granules.

Experiment 19.—3, 8, 1893. Full grown gray and white rabbit. Exact repetition of Experiment 16.

Experiment 20.—4, 17, 1893. Full grown black rabbit. Five minims of cyanuret of mercury, 1 to 1,000, injected into left vitreous. Immediately afterwards a large air bubble surrounded by a dark cloud. 4, 20, 1893. Whitish and darkish opacities in the vitreous partially obscuring the retina. 4, 28, 1893. Vitreous opaque and whitish. 5, 9, 1893. Scattered whitish opacities throughout the vitreous obscuring any view of the fundus. 5, 17, 1893. Entire vitreous opaque, of a dense white color.

Experiment 21.—4, 17, 1893. Full grown black rabbit. Five minims of cyanuret of mercury, 1 to 1000, injected into left vitreous. 4, 20, 1893. Whitish and grayish opacities in vitreous, largely obscuring the retina. 4, 28, 1893. Entire vitreous filled with an irregular whitish mass covered with hemorrhages. 5, 9, 1893. Practically no change from note under 4, 28, 1893, except that in the upper and the inner portion of the vitreous there is a break in opacity, permitting a red reflex from the fundus. 5, 11, 1893. Eye removed and placed in Müller's fluid.

Microscope.—Choroid detached; retina not distinguishable, being bound up with extensive tissue formation in vitreous composed of young fibrous tissue, inflammatory cells, pigment cells and blood corpuscles.

Experiment 22.—5, 11, 1893. Large buff-colored rabbit (pregnant). Two minims of trichlorid of iodin injected into right vitreous. Immediately afterwards two air bubbles and a small ring of opacity visible with the ophthalmoscope. 5, 17, 1893. Large circular opacity of dense white color with a clear center directly in the center of the vitreous; the rest of the vitreous clear. 6, 1, 1893. Circular opacity described above, with strands of similar color passing in several directions through vitreous. Eye removed and placed in Müller's fluid, but not yet examined.

Experiment 23.—5, 11, 1893. Full grown buff-colored rabbit.

Five minims of blue pyoktanin, 1-1000, injected into right vitreous. Immediately afterwards a small purple cloud visible in the center of the vitreous. 5, 17, 1893. Irregular dark opacity up and in, and the entire vitreous of a faint, purplish hue. No detachment of the retina. 6, 1, 1893. No change before rabbit's death, two days ago.

SECOND SERIES.

Experiment 1.—2, 8, 1893. Full grown albino rabbit. Five minims of an emulsion of staphylococcus pyogenes aureus of the sixth generation injected into right vitreous. 2, 9, 1893. Some purulent conjunctivitis, entire cornea hazy, iris dimly visible below in the upper and inner portion of the cornea and yellowish, purulent mass. Five minims of bichlorid of mercury injected directly into the vitreous. 2, 10, 1893. Much increase in the purulent keratitis. Eyeballs soft. Germicidal injection repeated. 2, 17, 1893. Rabbit dead from general infection.

Experiment 2.—2, 24, 1893. Full grown white and gray rabbit. Production of extensive hypopyon keratitis and probably purulent hyalitis by emulsion of staphylococcus. Five minims of bichlorid of mercury 1-5000 injected without result. Rabbit dead from general infection.

Experiment 3.—2, 8, 1893. Large mongrel poodle, full grown. Five minims of emulsion of staphylococcus injected into right vitreous. 2, 9, 1893. Slight conjunctivitis, cornea hazy and pus in the central layers. No view of fundus. Ten minims of bichlorid of mercury 1-500 injected into vitreous. 2, 10, 1893. Extensive purulent keratitis, the eye soft, injected, and apparently in a state of panophthalmitis. Germicidal injection repeated. 3, 8, 1893. No further treatment was given to the mongrel poodle except to wash his eye with warm water. The conjunctivitis gradually disappeared and the eyeball lost its inflammation. At this date the eye is quiet, slight injection of the episcleral vessels, no pus anywhere visible, the cornea hazy in its lower portion, but the iris visible above, being a result entirely unexpected after the injection of the staphylococcus.

Experiment 4.—2, 20, 1893. Gray and white rabbit. Five minims of staphylococcus emulsion injected into right vitreous. 2, 21, 1893. Five minims of bichlorid of mercury, 1-500, injected. 2, 24, 1893. Purulent ulcer and hypopyon and the rabbit dead of general infection.

Experiment 5.—2, 20, 1893. Full grown rabbit. Exact repetition of Experiment 4, with the same result.

THIRD SERIES.

Experiment 1.—2, 27, 1893. Full grown black rabbit. Five minims of staphylococcus emulsion injected into right vitreous, immediately followed by 5 minims of bichlorid of mercury, 1-500. 3, 1, 1893. Cornea infiltrated and a large quantity of pus in its lower portion. 3, 6, 1893. Entire cornea red, pus filling the anterior chamber. 3. 10, 1893. Eye intensely hyperemic; extensive hypopyon. No ultimate improvement.

Experiment 2.—2, 27, 1893. Full grown tan and white rabbit. Five minims of staphylococcus emulsion injected into right vitreous, immediately followed by 10 minims of cyanuret of mercury, 1-1000 3, 1, 1893. Cornea cloudy and infiltrated. No view of the eye ground. 3, 6, 1893. Large mass of the appearance of lymph filling the anterior chamber and giving the impression of spongy iritis. 3, 10, 1893. Extensive hypopyon keratitis with purulent conjunctivitis. No ultimate improvement.

Experiment 3.—2, 27, 1893. Full grown gray rabbit. Two minims of staphylococcus emulsion, immediately followed by an injection of 10 minims of aqua chlorinata, into the right eye. 3, 6, 1893. Hypopyon keratitis. 3, 10, 1893. Entire cornea cloudy and infiltrated, and pus filling the entire anterior chamber. Eyeball removed and placed in Müller's fluid.

The thirty-one experiments which comprise this research may be summarized as follows:

Normal Eyes.—There were six injections with bichlorid of mercury, the dose varying from 2 to 5 minims; in all, permanent lesions visible with the ophthalmoscope were produced in the vitreous; two eyes examined with the microscope showed extensive new formed connective tissue in the vitreous, together with detachment of the choroid and retina on the one hand and, on the other, lesions indicating an early stage of proliferating retinitis.

There were eight injections with aqua chlorinata, the dose varying from 5 to 10 minims; in all, permanent vitreous lesions were produced, except in one (Experiment 8), in which the vitreous remained clear; that is, there were no well-formed dark opacities, or white areas of infiltration. One eye in this series was contaminated by imperfect sterilization of the syringe. Two eyes were examined with the microscope, and showed in one after thirty-one days had elapsed, extensive detachment of the retina and the formation of a band of tissue composed of young cells and fibers constituting the so-called inflammatory material, which passed from the optic nerve entrance through the entire vitreous; and in the other a circumscribed detachment of the retina three days after the injection.

There were eight injections with cyanuret of mercury, the dose being 5 minims in each, and causing in every instance positive lesions in the vitreous demonstrable with the ophthalmoscope in the form of more or less dense opacities. Two eyes examined with the microscope showed in one detachment of the retina, hernia of the choroid into the wound produced by the puncture with the needle, causing traction on this membrane; and in the other twenty-five days after injection, extensive tissue formation in the vitreous of the type previously described.

There was one injection of trichlorid of iodin, the dose being 2 minims, resulting in dense opacity of the vitreous. There was one injection of blue pyoktanin, resulting in a purplish discoloration of the vitreous, and a cloudlike opacity.

Pathological Eyes.—In the first series there were five experiments—four rabbits and one dog—purulent hyalitis going on to purulent ophthalmitis, having been produced by staphylococcus emulsion. The inflamed eyes were treated by injections of bichlorid of mercury directly into the vitreous, the dose being 5 and 10 minims, and varying in strength from 1-500 to 1-5000. The rabbits failed to show any signs of amelioration, and died from general infection. The dog showed no improvement at first but gradually improved, and one month after the last injection, only two having been given, was discharged with the eye comparatively quiet, a moderately dense macula being all that remained of an inflammation which at its height gave evidence of the most extensive purulent kerato-iritis, probably ophthalmitis.

In the second series there are three experiments, all rabbits, who received a simultaneous injection of staphylococcus emulsion and 5 minims of bichlorid of mercury 1-500, 10 minims of cyanuret of mercury 1-1000, and 10 minims of aqua chlorinata officinal strength respectively. In no case was there the slightest improvement. The eyeball of Experiment 3 treated with aqua chlorinata was examined with the microscope and showed purulent infiltration of all of the coats of the eye—in other words, an acute panophthalmitis. Hence it is evident that in the normal eyes injected with solutions of various antiseptic substances, only one escaped positive permanent lesion easily visible with the ophthalmoscope, and situated usually in the vitreous, more rarely in the choroid and retina. This exception occurred with aqua chlorinata, and is so unexpected a result that suspicion is not lacking that there may have been failure to introduce the drug as thoroughly as in the other eyes, although there is no note as to any imperfection in the experiment. It is mentioned, however, because as will be remembered, Dr.

Berry has found that chlorin water was better tolerated by the retina and vitreous than other strong antiseptic fluids.

These experiments certainly fail in confirming the observations of Ovio, that weak solutions of sublimate may be injected into the vitreous without causing chronic lesions; that is to say, a solution of 1-5000 will produce as much disturbance as a lotion of 1-500. It seems evident from the experiments that under any circumstance more would depend upon the dose of the drug injected than upon the strength of the solution used. Two minims seem to be much less likely to cause a general clouding of the vitreous than 5 or more minims, but none the less, even in this small dose, in each instance they caused a chronic and dense vitreous opacity. In addition to the lesions which are so evident with the ophthalmoscope, the microscope shows that they were not confined alone to the vitreous, and that others, not ordinarily detectable, were present. Thus, according to circumstances, we deal with edema and rarefaction of the choroid; sometimes with its detachment; with detachment of the retina and a type of retinitis analogous to that which is designated proliferans; and with connective tissue formation in the vitreous of extensive character. Not only this, but it is interesting to note that in two of the punctures examined there was well-marked hernia of the choroid. How much such incarceration of this membrane would add to the danger of the treatment it is difficult to decide. It is suggestive of the fact that other punctures in operative surgery in this region may be followed by a similar result.

The entire failure to check the purulent inflammation called into existence by staphylococci emulsion, by injecting into the vitreous strong solutions of bichlorid of mercury, or to prevent its occurrence by a simultaneous injection of a solution of bichlorid of mercury, cyanuret of mercury, or aqua chlorinata, is instructive, as showing an indifferent therapeutic power on the part of these injections; but it should be remembered in all fairness, that the inflammation was exceedingly active, that the number of experiments is comparatively few, and that the animals used were rabbits, whose well-known susceptibility to all agents that cause suppuration render them peculiarly liable to the activities of the staphylococci, and equally difficult to impress with counteracting remedies. The apparent cure of the mongrel cur is interesting as an isolated fact, but can not be accepted in strong confirmation of the treatment chiefly because it is a single experiment and needs confirmation. In fact, to test the therapeutic value of these injections, dogs should be submitted to a similar series of experiments.

The evident conclusion of the whole matter, from the experimental standpoint of the present research is, that the vitreous, choroid and retina withstand badly intra-ocular injections of various antiseptic solutions; that these injections in rabbits have no influence in preventing or checking a purulent inflammation originated by staphylococci injection; that in a dog intra-ocular injections of bichlorid of mercury were followed by the cure of a purulent ophthalmitis; that if the drugs are to be employed, the dose should be a small one, probably not more than 2 minims, in this respect conforming with Abadie's original recommendation.

DENDRITIC KERATITIS.

Read in the Section on Ophthalmology at the Forty-Fourth Annual Meeting of the American Medical Association.

BY WM. H. WILDER, M.D.

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In 1871, at the Heidelberg Ophthalmological Congress, Horner[1] described a disease of the cornea characterized by the appearance of numerous vesicles arranged in groups, accompanied by severe pain, photophobia, lachrymation and conjunctival irritation coincident, in many cases with herpes febrilis of the nose, lips, eyelids and other parts of the face. In the thirty-one cases observed by him, there was in every case some catarrhal inflammation of the respiratory passages, and in twenty-eight there was present a herpes of the nose or lips. To this affection Horner gave the name, "herpes febrilis cornea."

Inquiry as to the cause of this condition has been further prosecuted by subsequent writers, notably by Mlle. Kendall[2] a pupil of Horner, who in 1880, analyzed 115 cases from the Zurich clinic.

These were differentiated from Zoster and classed as herpes febrilis. As to the general diseases that were held to have some causal relation to the corneal affection, coryza, catarrh, or cough preceded or coëxisted with thirty-six; pneumonia with thirteen; passing chill and fever eleven; intermittent fever three; rheumatism two; gastric catarrh two; hay fever, typhoid, toothache, whooping cough, cessation of a chronic discharge of nose, erysipelas each caused one case; two occurred while patients were in childbed; some mild illness accounted for three; while in thirty-seven there was no existing malady or assignable cause for the herpes of the cornea.

With these observations accord well the opinion of Godo[3] who attempted to differentiate a symptomatic and an idiopathic form of the malady; in the former of which there was a period of general illness followed by the appearance on the cornea of vesicles which, breaking down, left small ulcers. Godo observed that malarial infection was present in nearly one-third of his cases, and ascribed to it the cause of the corneal herpes. Still later, Haab, who succeeded Horner in Zurich, Fuchs, Adler and others have noticed the frequency of herpes of the cornea following influenza. A valuable contribution to this subject is an inaugural thesis by Wangler,[4] which appeared in 1889, and contains a study of all the cases, 150 in number, that had been observed in the Zurich clinic since 1871. This number shows nearly 4 cases to each 1,000 patients (about 0.37 per cent.), which indicates that the affection is not so rare as has been commonly supposed.

In the Ophthalmological Section of the Eighth International Congress of Medicine at Copenhagen in 1884, Hansen-Grut[5] reported a condition of the cornea which he termed "dendritic keratitis." He describes it as "a superficial ulceration with a chronic course and a tendency to become serpiginous." It begins with slight pain and conjunctival injection. The epithelium ulcerates rapidly and during the whole course of the malady, the pain, injection and photo-

1 Zehender's Klin. Monatsbl. 1871, p. 326.
2 Josephine Kendall, "Ueber herpes corneæ" Inaug. Diss. Zurich, 1880.
3 De l'herpès fébrile de la cornée. Recueil d'Ophthal, 1880, p. 183.
4 Ueber herpes corneæ—Zurich. 1889.
5 Transactions of Eighth International Congress Ophth. Section, Aug., 1884.

phobia are comparatively insignificant. "The ulceration continues to propagate itself, '*dans tous les sens*,' by means of buds or excrescences, so that the line of demarcation of the ulceration, which remains very superficial during the whole course, becomes very irregular. The surrounding parts remain perfectly clear and the cornea does not become vascular. This affection must not be mistaken for vesicular keratitis. It is in no way connected with frontal herpes, nor with herpes accompanying bronchial catarrh or pneumonia, the form so well described by Horner." In a later communication, he differentiates dendritic keratitis from herpes cornea and says: "In the former there is no question of vesicles, and in no case was there any previous disease that could have occasioned an herpetic eruption."

Somewhat later, Emmert,[6] apparently without a knowledge of the contribution of Hansen-Grut to the subject, recorded and described six cases of a new affection, which seems from the description to be similar in nature to those seen by the latter author. In these cases there was a form of ulcerative keratitis beginning as a point of grayish sub-epithelial opacity, from which branches were thrown out, these in turn dividing and throwing off branches to either side. The ulceration was progressive but remained superficial and was accompanied by more or less photophobia, lachrymation and redness of the conjunctiva. On examination of scrapings from the furrows he found bacilli.

While both writers suspected that the malady was of mycotic origin, Emmert believed it to be connected in some way with the scrofulous and tuberculous diathesis, but Hansen-Grut denies this influence. Emmert observed in a number of his cases that the point of departure was an ulcer, possibly from some abrasion, or from a foreign body on the cornea, which seemed to furnish the door of entrance for the microörganisms. Both these writers appear to have been unaware of the fact that Chas. J. Kipp[7] of Newark, N. J., in 1880, four years previous to the announcement by Hansen-Grut of the discovery of a peculiar dendritic form of ulceration of the cornea, had read a masterly article before the American Ophthalmological Society, describing an affection which, in its salient features is remarkably similar to that recorded by the Danish observer, but ascribing the cause to malarial infection. "This ulceration," he says, "is commonly first noticed shortly after an attack of intermittent fever, often simultaneously with the appearance of herpetic vesicles on the nose and lips. In a number of patients who had annual visitations of this fever, each attack was regularly followed by the ulceration of the cornea." The ulceration began with severe pain in and around the eye, especially along the course of the supra-orbital nerve, with circumcorneal injection, photophobia and lachrymation, symptoms which in Hansen-Grut's cases were quite insignificant. If examined early enough, one or two slightly raised opaque lines were seen on the cornea, which on the following day had increased in length and had been transformed into a shallow ulcer. He does not speak of the epithelium being raised to form vesicles. The ulcer spread slowly by sending out at places club-shaped, slightly raised, grayish offshoots from its sides, which were nothing more than small areas of new infiltration in connection with the original ulcerated area. In this way was formed a branching, dendriform ulceration which had a tendency to extend over the greater part of the cornea if not checked.

In most of Kipp's cases, the ulcer remained superficial and showed no tendency to extend deeply as in serpiginous infected ulcer; and a hypopyon was rarely seen in connection with it. In this respect, as well as in chronicity and the length of time required for complete healing, this ulcerative process resembles that described by Hansen-Grut,[8] while in most particulars, the description accords so well with that of Emmert,[9] that one is constrained to believe the process is the same. Within the past eight months, three cases of this interesting affection have come under my observation, which although presenting no new features, resemble in some respects all the so-called different varieties of this condition.

Case 1.—J. P., age 30; Polish; came to Chicago Policlinic March 30, 1892, with a superficial ulcer of the left cornea which began a few days before as a soreness of the eye. There was considerable temporal pain, lachrymation and photophobia. On the cornea was seen an ulcer beginning near the upper margin and extending downward, and on each side of it was a little branch or bud that suggested at once dendritic ulceration. No history of any recent illness was obtained, but he had suffered from malaria some years ago. He was given quinia sulph. grs. iv t. i. d. The ulcer extended and seemed to become deeper. Small offshoots were thrown out from the main branch, but after crossing the central part of the cornea the process ceased and healing took place rather rapidly so that by April 22 he was well.

The opacity that remained marked the course of the ulcer. (Fig. 1.) The treatment consisted of instillations of atropin gr. iv. ʒi., hot applications to relieve the pain, and quinin.

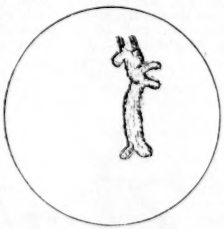

FIGURE 1.

Case 2.—J. G., age 52; was first seen June 15, 1892, at the Chicago Policlinic, when he complained of pain in left eye, with great lachrymation and photophobia. Trouble began eleven days before, and had been gradually increasing. A superficial ulcer of the cornea could be seen extending from above downward. This branch had a small offshoot to the left, and the floor of the ulcer had a grayish appearance. There was severe temporal and frontal pain, and pressure upon the supra-orbital nerve and its branches caused excruciating pain. Patient had suffered extremely from malaria when in the army, nearly thirty years ago, and since then had had from time to time attacks of neuralgia, malaise, etc., that he attributed to malarial poisoning. Cornea was not anesthetic. Ocular and palpebral conjunctiva considerably injected. Ordered grs. x. of quinin early in the morning, for the pain seemed to be most severe in the forenoon; atropin and hot applications to the eye. Two days later he seemed to be better, and the dose of quinin was diminished.

June 25. Ulcer seemed to be spreading downwards;

[6] Centralblatt f. praktische Augenheilkunde 1885, p. 302-311.
[7] Transactions of the American Ophthal. Society, 1880.
[8] Op. cit.
[9] Op. cit.

another little bud was seen to the left. A few days later as the disease was not checked, the ulcer was cauterized thoroughly with 95 per cent. carbolic acid, after dropping into the eye a 2 per cent. sol. of fluorescein in order to differentiate the ulcerated area, which was then stained green, the healthy cornea remaining uncolored. The eye appeared better next day; the upper part of the ulcer had healed, but in a few days the trouble began again, the ulcer gradually creeping around the center of the cornea, always remaining superficial, the main stem sending off small branches. July 10 it was again cauterized, and Fowler's solution substituted for the quinin, 5 drops three times a day. In a few days the ulceration ceased and the cornea soon healed. (Fig. 2.) At no time in the course of the disease,

FIGURE 2.

was there any hypopyon or any evidence of inflammation of the iris. The opacity that remained some time was not very dense, and when the patient was last seen, seemed to be clearing away rapidly.

Case 3.—O. H., German; age 24; came under my care at the Cook County Hospital Oct. 8, 1892. Had hemorrhage of lungs two years ago, and was inoculated with Koch's tuberculin. Has lost flesh lately. Had some inflammation of eyes five years ago, and was fourteen days in a hospital. Two weeks ago recovered from an illness which was characterized by chill followed by fever and sweating, the paroxysms occurring every second day. Present trouble of right eye began two weeks ago with redness, dimness of vision, photophobia, lachrymation, pain and continuous irritation which gradually grew worse. On examination the conjunctiva was seen to be somewhat swollen and injected. On the surface of the cornea were superficial

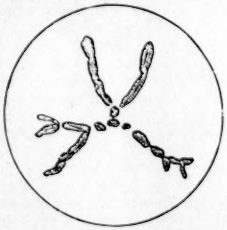

FIGURE 3.

ulcers arranged in a branching form. These minute ulcers had become confluent in some places, while in others they remained separated from each other by a narrow isthmus of unbroken epithelium. The instillation of a 2 per cent. solution of fluorescein brought out this point very distinctly. (Fig. 3.) During the examination the patient had a severe chill which began at 1 P. M., followed by fever (T. 105, p. 120) and sweating. The examination of the blood by Dr. Hessert the house surgeon, showed the presence of the plasmodium malariæ. Ordered 15 grains of quinin in divided doses that evening, and the same quantity the following morning; after that 5 grains every four hours; atropin and hot applications to the eye. Patient improved rapidly, had no return of the chill and in a few days the ulcer was healed leaving a faint opacity marking the course it had taken. There was no appearance of irritation of the iris.

Are the different writers who contend that they are describing essential and distinct forms of corneal disease justified in their claims? Can it be proven that the "dendritic keratitis" of Hansen-Grut and the "keratitis dendritica exulcerans mycotica" of Emmert are separate and distinct forms of ulceration as these writers aver; or that Kipp's malarial keratitis is a variety occurring only as a result of miasmatic infection; or must we accept the opinions of Haab, Wangler, Kendall and Hagnauer that all these cases properly belong to the class of herpes febrilis originally described by Horner.

According to Haltenhoff,[10] to whose article in the *Annales d'Oculistique*, of June, 1892, I am greatly indebted, Hagnauer, in a thesis for his doctorate written in 1891, presumably under the supervision of Haab, complains that during the last twelve years several authors have described as new, forms of superficial keratitis which were so like the herpes of Horner as probably to be the same. Hagnauer contends that the cases of Hock (Centralbl. f. Augenheilkunde, December, 1885), Macrocki (Klin. monatsbl. f. Augenheilkunde, Mai, 1890), Gillet de Grandmont (Archiv. d'Ophthalmologie, 1887, p. 422) belong in the category of herpes febrilis. He places also in the same class the cases of Kipp[11] and Van Millingen.[12]

In spite of the rarity of intermittent fever in Zurich, five cases are ascribed to this disease. Kipp's[13] experience leads him to believe that malarial fever was the cause of the corneal disease in 90 per cent. of all the cases in which the peculiar ulceration was present. Furthermore, he thinks the affection is identical with that described by Hansen-Grut and Emmert, and does not doubt that it is of a mycotic nature.

The contention of the latter authors that in cases of dendritic ulceration there is no question of vesicles does not seem to be well grounded, since most cases would probably present themselves to the surgeon only after the delicate epithelium covering the vesicles had broken down, when only the minute ulcer would be seen. Haab has had the opportunity of seeing but one case in which the vesicles were intact. The further observation of these writers that in their cases there was no coincident herpes of the face, nor any febrile affection that would be likely to occasion such an eruption, only accords with the forty or more cases of Kendall, and the cases of others in which there was either no previous illness, or it was so slight as to pass almost unnoticed. The fact that in some cases the subjective symptoms of pain, photophobia and lachrymation are marked, and in others quite insignificant, certainly does not furnish a very accurate differential sign.

That attacks of malarial fever may induce an ulceration of the cornea that assumes a dendritic form, as has been so ably presented by Kipp, is unquestionable, but that the keratitis and the resulting ulceration are the direct result of the malarial poison is to be doubted. The fact that in many of Kipp's cases there was a simultaneous eruption of herpes vesicles on the face would point rather to the explanation that the corneal trouble was also herpetic, and that the small vesicles quickly breaking down and becoming confluent, left the irregular branching ulceration. In my third case (Fig. 3),

[10] Annales d'Oculistique, June, 1892.
[11] Op. cit.
[12] Centralbl. f. Augenheilkunde, January, 1888.
[13] Trans. Amer. Ophth. Soc., 1889, p. 331.

which to my mind was unquestionably induced by the malarial fever, this point seemed to be clearly demonstrated. In this case, as shown in the figure, there were some very minute ulcers which seemed to be separated from the others in the branch by a narrow isthmus of unbroken epithelium, suggesting that the branch had been formed by the confluence and breaking down of little vesicles that were adjacent. The staining of certain points in the branch more deeply than others with fluorescein, seemed to indicate that these were the points of the original infiltrations. That anti-malarial treatment acts well in cases in which there is malarial poisoning has been pointed out by Kipp,[14] Hotz[15] and others, but this can hardly be cited as proof of the direct relation between malaria and dendriform ulceration. In Case 2, the exhibition of arsenic in 5 drop doses of Fowler's solution apparently worked like a charm, but I am still in doubt as to whether it was the anti-malarial or the caustic treatment that effected the cure.

Hagnauer observed sixteen cases of herpes corneæ, in a period of six weeks, in patients affected with the grippe, and Hansen,[16] Pflüger,[17] Greff,[18] Eversbursch[19] and others, have recorded cases observed in the last epidemics of influenza, that in appearance simulated keratitis dendritica. It seems quite probable that future observations will tend to simplify the pathology of this interesting subject by classifying all dendriform ulcerations as herpes of the cornea, rather than adding the complication of another variety of keratitis.

70 State Street.

TWO CASES OF BRAIN TUMOR WHERE OPTIC NEURITIS WAS THE ONLY POSITIVE SIGN—AUTOPSIES.

Read before the Section on Ophthalmology at the Forty fourth Annual Meeting of the American Medical Association.

BY EDWARD P. MORROW, M.D.
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Although pathognomonic symptom is a term in medicine, yet taken in its strict interpretation we have no symptom by which we can positively determine a disease without question. Taken in its better sense, a characteristic symptom of a disease, we may call optic neuritis a pathognomonic symptom of brain tumor. This has been so well established that it needs no discussion. The object of this report is not to further establish that fact, but to present two cases where optic neuritis was the first, and up to the time of its discovery, the only positive sign upon which a diagnosis could be based. For that reason I take it, brain tumor, with its ophthalmic aspects may be worthy of a discussion here, inasmuch as the ophthalmologist is sometimes called upon to give his opinion and to aid in the diagnosis of a case. To give positive or negative evidence as to choked disc may be all that is asked of him, but if he is also able by his knowledge of the relation between choked disc and intracranial diseases to differentiate between abscess, tumor, aneurismal tumor, etc., as well as to give some opinion as to its probable location within the skull, his services will surely be of more value than those of the specialist whose knowledge as well as his practice is limited to the eye.

Case 1.—Is a lad 17 years of age, well formed and well nourished, of good parentage. There is a large family of boys and girls all in good health. In April, 1887, he had a fall from a bicycle, striking his head and rendering him unconscious, from which he promptly recovered. From that date, however, he was under treatment from time to time, for what his physician supposed to be a general run down state. He had no special symptoms except weakness and malaise with occasional dizziness when walking. The physician under whose care he was at that time, tells me that at no time did he have any symptoms that led him to suspect any cranial trouble. In November, 1887, the family changed physicians and employed Dr. James Fraunfelter of Canton, Ohio. The boy made occasional visits to his office, complaining mostly of dizziness and occasional vomiting. The Doctor suspected some head trouble, but continued to treat him expectantly until in December, when he took to his bed, saying he was too tired to be about. Shortly after this he complained that his vision was imperfect and confused. My service was asked Dec. 15, 1887, to determine the cause of his eye trouble, and if possible shed light upon the diagnosis. I found the patient in bed. His greatest complaint was that he was tired, did not sleep well, and did not want to exert himself. While he had had occasional headaches up to this time, they had not been severe nor localized. There was no paralysis or febrile condition. An examination of the eyes revealed moderately dilated pupils, that reacted to light rather sluggishly.

With such tests of his vision as could be made, it was found that he could read large types and distinguish objects in the room. His confusion of vision was probably diplopia, although it was impossible to make tests to prove it. Such tests as could be made showed no paralysis of ocular muscles. The ophthalmoscope showed at this time a double optic neuritis in the swollen stage, with numerous retinal hemorrhages in the region of the disc. The revelation of the choked disc with the history of the head injury and character of the symptoms led at this time to a provisional diagnosis of cerebral abscess in the latent stage. The later gradual and uniform development of symptoms changed the diagnosis to that of brain tumor. These symptoms were, gradual and increasing pain, localized to right side, vomiting, gradually increasing in frequency. Facial paralysis and paralysis of external rectus muscle of right side. At no time was there rigor or rise of temperature, nor were the symptoms sudden or rapid, thus excluding any suppurative process. During the last week of his illness he had several epileptiform convulsions; except during these, he retained consciousness and a fairly good intellect up to the time of his death, which occurred the last week in January, 1888, five weeks after the ophthalmoscope revealed the optic neuritis.

Autopsy.—Body fairly well nourished. Calvarium removed, external and internal surface of skull normal. Calvarium not unusually adherent to dura mater; dura mater hyperemic. Surface of brain when dura was removed showed no abnormality or asymmetry. No unusual amount of fluid in arachnoidal space. Brain removed without membranes. The optic nerves when exposed showed to sight and touch no unusual appearance. Longitudinal sections of the brain were made from above downwards. The tissues were normal in appearance and consistency until the temporal lobe of right side was reached; here the tissues began to soften from above downward until a glioma, pear shaped, amber in color, soft and somewhat commingled with the cerebral substance was found, lying at the base of the middle lobe. Its long axis, more than two inches, was directed backward and inward. The large end, over an inch in diameter, was backward and within the temporo-sphenoidal lobe, the small end forward and outward.

Case 2.—Also a young man, 19 years of age. The history I obtained is imperfect, as he was living in the country and did not consult any physician early in his trouble. When he did, he went the rounds of all of them, so that it is impossible to get any connected report. In November, 1892, he came into the hands of Dr. J. F. Marchand of Canton, Ohio, with whom I saw the case, and to him I am indebted for the following history of symptoms: he first complained early in the summer of 1892 of an unsteadiness of gait; this continued until late in the summer, but was not sufficiently annoying for him to seek advice. Later, however, he had

[14] Op. cit.
[15] Chicago Med. Journal and Examiner, December, 1881.
[16] Hospitals Tidende, 1891.
[17] Reviewed in Annales d'Oculistique. Fev., 1892.
[18] Berlin Klin. Wochenschrift Nr. 27, 1889, Ibid.
[19] Münch. Med. Wochenschrift S 89, 1889.

seasons of vomiting, and for this he saw a number of physicians without relief. In September of the same year he took to his bed, not because of any inability to be about, but apparently from the beginning of a lethargy which continued to develop and from which he never could be wholly aroused. When I first saw him in November, 1892, he was vomiting considerably and had by this time become somewhat emaciated. His intellect was dull, his condition was passive in the extreme. He answered questions in short, shouting monosyllables, yes or no. It took him considerable time to understand what was said to him, but when he did understand, his answers were intelligent and correct. He complained of some headache, but it was seldom severe, and at this time not localized. The first examination of the eyes made at this time revealed widely dilated pupils. Eyes straight. Tests showed remote and proximate vision normal. The media were clear and fundus normal, except considerable hyperemia of the disc, which by subsequent examinations proved to be commencing optic neuritis. Under treatment with bromids and ergot his vomiting ceased for quite a period and his condition somewhat improved.

A subsequent examination made January 15, 1893, showed a double optic neuritis in the swollen stage, with numerous hemorrhages in the retina. There was still considerable vision, as he was able to read a typewritten address on an envelope and other such tests as could be obtained. There was no paralysis of any muscle of the body, and at no time up to the time of death did any develop. The subsequent history is one of constant decline. Emaciation became extreme, although he ate largely and vomited but little. Toward the end he became blind, developed the cephalic cry and was reduced to imbecility. On the morning of March 12, 1893, he ate a hearty breakfast and died almost instantly afterwards.

Necropsy.—Body greatly emaciated; calvarium removed; membranes anemic; no arachnoidal fluid; brain removed without membranes; surface of brain showed no asymmetry, but bloodless. Sections of brain made horizontally from above downward, nothing abnormal except anemic condition until ventricles were opened. These were enormously enlarged and distended with fluid. Further sections of the cerebrum showed no evidence of lesion. When the cerebellum was examined a tumor, disc shaped, about one-half inch in thickness and two inches in diameter, was observed upon the superior surface of the cerebellum, covering the superior vermiform process and extending about equally over each lateral hemisphere. The tumor was a soft glioma and broke down under slight pressure. An examination of the optic nerves showed nothing abnormal to sight or touch.

Among the points of interest, those especially claiming attention are I think, 1, that the ophthalmoscope was the first to give objective and positive evidence of a cerebral lesion in either case; 2, the obscurity of the symptoms and the similarity in both cases of cerebral abscess in the latent stage In Case 1, a positive diagnosis was not made until late, on account of the head injury being taken as a cause of abscess. In Case 2, a diagnosis of brain tumor was made, not because of any uniform symptoms of brain tumor, but because of the absence of any ascertainable cause of an abscess; 3, the location of the tumor. Tolerance of the nerve elements of the temporal lobe has been shown many times in abscess following injury or ear diseases. Tolerance is also shown in Case 1 to a tumor in the same location until it reached considerable size, when by encroaching upon the sixth and seventh cranial nerves, strabismus and facial paralysis resulted.

In Case 2, the remote position from intracranial nerves would account for the absence of paralysis of parts supplied by them. The mental condition in Case 2 was due, not to the location of the tumor primarily, but in all probability to the great distension of the central cavities of the brain and the consequent anemia, with its effect upon the nutrition of the elements. We find, however, in both cases, that while the other intracranial nerves tolerated the neoplasm, that the optic nerve succumbed to inflammation.

A point of interest in the autopsy is the absence of fluid in the arachnoidal space in both cases, as well as the apparent normal state of the optic nerves to the unaided senses. No microscopic examination of the nerves was made to determine the condition of the sheath or intervaginal space.

Of the two prominent theories advanced for choked disc, namely, the lymph space and the vasomotor paralysis theory, I can not see that these cases add to or subtract from either. Certain it is that our knowledge of the pathology of optic neuritis is unsatisfactory and that neither of the theories, clever and enticing as they are, are able to withstand criticism or investigation. The conclusions reached by Gowers[1] are rational and in accord with the present state of our knowledge. He says: "It is probable that optic neuritis is rarely due to a single factor, and that the most potent element is the descent of a process of tissue irritation, which when it reaches the papilla sets up a more intense inflammation; that in some cases this influence is alone effective; that in others it is aided by the distension of the sheath which hinders the escape of effete products, increases edema, or even conveys irritating material.

"The distinction between optic neuritis and choked disc is one of degree and not of mechanism. So far as optic neuritis has any single significance, it is that of an irritative process within the skull."

DR. DE SCHWEINITZ—I have listened with interest to Dr. Morrow's paper, and would urge the importance of placing upon record, in connection with careful ocular examination, all cases of intracranial lesion, especially tumors, in which the position of the disease had been substantiated by a necropsy.

We all know that there are the so-called "quiet regions" in the brain. I had a case in my own practice, of large tumor of the right frontal lobe, without the presence of active symptoms until about thirty hours before death. The tumor occupied the white matter of the right frontal lobe as far back as the bases of the first and second convolutions, and from the ventricular surface involved the head of the caudate nucleus, and by softening, the structures as far back as the thalamos, and yet was practically, if not entirely, quiescent. Optic neuritis had been present for some time and was probably the only symptom of the brain tumor until thirty hours before death, when convulsions, hemiplegia and conjugate deviation of the head and eyes to the left side were noted. These symptoms were the result of a fresh hemorrhagic lesion in the left crus and on the left optic thalamos.

I would urge the importance of a careful examination of the field of vision in all cases, especially if operative interference upon the intracranial lesion is contemplated. I have the report of a case of epilepsy, not Jacksonian in type, which has existed for two years, with no other symptom save the convulsive attacks and headaches. The fields of vision were concentrically contracted. Two years later double optic neuritis and left lateral hemianopsia were manifest. On the strength of the late development, hemianopsia, Dr. Wood diagnosticated a secondary lesion in the cuneus, thinking it probable that the original lesion, a tumor, was connected with the cerebellum, because this was the "region of silence" nearest to the area which gave evidence of the disease by reason of the hemiopic defect in vision. The patient was trephined by the late Dr. Agnew,

[1] Lectures on the Diagnosis of Diseases of the Brain. W. R. Gowers M.D., F.R.C.P., 1885, p. 164.

and a cystic tumor, or area of inflammatory degeneration, found within the cuneus beneath the gray matter. The patient died, and at the autopsy a large tumor occupying the second and third temporal convolution of the right side and approaching the fourth convolution, was discovered, together with a patch of hemorrhagic softening in the cuneus and a line of softening running nearly the whole length of the center of the occipital lobe. The field of vision in this case correctly located a lesion in the cuneus, although it gave no evidence of the tumor in the temporal lobe on the right side, which hence may be involved without the production of immediate direct symptoms. This case, utilized to illustrate the importance of the field of vision in localizing intracranial lesions, has been fully reported, both from the neurological and the surgical aspect, by Drs. Wood and White.

Dr. Morrow—In reply to Dr. de Schweinitz's remarks regarding the field of vision, I will say that it was impossible to get any satisfactory tests of the field. Such rough tests as were possible were of no value, and so were not reported.

I believe it to be highly important to impress upon the general practitioner the necessity of early and frequent examinations in cases of suspected head trouble, as well as in those cases where the diagnosis is clear, for the reason that positive evidence can often be obtained by the ophthalmoscope and perimeter, both as to the condition and location, that would escape other means.

PURULENT OPHTHALMIA FROM THE STANDPOINT OF ITS SPECIFIC MICROBIC CAUSE;

WITH A PLEA FOR A MORE ENERGETIC, RATIONAL, ABORTIVE TREATMENT WHERE POSSIBLE.

Read before the Section on Ophthalmology, at the Forty-fourth Annual Meeting of the American Medical Association at Milwaukee.

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(*Concluded from page 564.*)

Mauriac[37] decides that "the abortive treatment is indicated and has some chances of succeeding in acute gonorrhea only during the first hours of its outset." Diday[38] believes: "That in the early stage every gonorrhea can be aborted," and "that the abortive treatment is neither locally nor constitutionally dangerous." Two methods may be followed: a strong solution may be used for a short time in the urethra or a weaker solution may be left in contact for a longer time. A 5 per cent. solution of nitrate of silver is allowed to remain in the urethra from forty to ninety seconds, according to the pain produced. A free discharge occurs after two days, and as a result of the burning may continue for four days and then gradually ceases in a few days more. The abortive treatment is considered worthy of trial in view of the serious complications at times following a gonorrhea. *If possible complications govern the use of abortive treatment of an urethral gonorrhea how much more urgent is this plan in a similar inflammation of the conjunctiva, because of their infinitely greater frequency and more deplorable results to the eyesight of these cases.* According to Horner[39] the blind in different countries owe their loss of eyesight to this disease in from 20 to 79 per cent.

In the newborn eye, Credé[41] of Leipsic, recommended the instillation of one drop of a 2 per cent. solution of nitrate of silver and had the satisfaction of noting a reduction of purulent attacks from 7.5 to 0.5 per cent. In the lying-in hospital of Halle,[42] under the same treatment these cases fell numerically from 12 to 3 per cent. *The mechanical*[43] *removal or the destruction of the gonococcus is the therapeutical indication in all these cases. Remove the discharge and the loosened epithelia by watery solvent and brush, using at the same time and in the meantime an innocuous solution of the most powerful microbicide we possess.* The personal element in the treatment of all diseased conditions enters largely, and the followers of a plan are not always as successful as the originator. On this account, though all agree upon the same remedy, a few still advocate its use in strong solutions most carefully applied, for direct destructive effect; whereas, a more numerous company nowadays use nitrate of silver in weak solutions more freely and without injurious risk and with equally good results. *Without known exception, it is decided that the remedy should only be used after suppuration has commenced.*

Such a conclusion I most forcibly condemn as inaccurate and unscientific, and cite as my authorities the pathological facts of this paper, and those of my own clinical experience. For years past I have looked upon all forms of conjunctivitis as closely associated with mycotic processes, and have treated them on anti-bacillary lines, and invariably their severity and duration have been most favorably modified thereby. If one microbe can produce a colony, and the latter only results in that wonderful process of attraction of leucocytes from blood vessel to mucous surface, and which we designate suppuration, where is the wisdom of waiting microbic multiplication with its resultant pus before applying our anti-bacterial methods. *Here, without bacteria no pus* is sound antiseptic teaching, and if we destroy, or remove them from the conjunctival surface, where recently implanted, or few in number, we will avoid the appearance of suppuration and escape entirely the so-called acute stage of the cases under consideration.

Under any circumstances ample irrigation with thorough brushing of the conjunctival surface for the mechanical removal of secretion and microbes fills the indication. For the purpose of removing microbes from an infected instrument, H. Knapp[44] in 1886 found that irrigation with running water was insufficient, but by rubbing the blade with his fingers at the same time as washing and afterwards polishing with a towel he succeeded in sterilizing it. Gayet[45] of Lyons, after carefully disinfecting the conjunctival sacs of his cataract patients still found that microbes remained in 75 per cent. of them on making cultivation experiments. Hence simple water, or solutions of antiseptics, with irrigation of the conjunctiva alone, are insufficient to insure thorough cleansing, and Knapp's rubbing of the instrument finds its parallel in a thorough brushing of the conjunctiva. This method, however, did not suggest itself to me in this way, but was thought of as an ordinary common sense procedure. If brushing will remove germs from a dermal surface why not also from a mucous membrane?

A fountain syringe and light pressure was suggested years ago by Dr. C. S. Bull.[46] A mucous solv-

ent in the shape of bicarbonate of sodium, will be a good addition to simple sterilized water, and again it is indicated because the gonococcus grows best in an acid medium, and Dr. M. A. Castillan[47] called attention to this fact and recommended its use in gonorrheal cases in solutions of 8 to 10 per cent. He claimed that in old cases in which other remedies had failed the alkaline medication "led to rapid and complete recovery." In a later communication[48] he claims to have had excellent results in acute gonorrhea from the use of a 1 per cent. solution. A watery solution of boric acid can be used ad libitum, though we can not say this of solutions of corrosive sublimate, for Dr. Friedheim[49] of Leipsic, working in Prof. Neisser's clinic, has called attention to the fact that "perchlorid of mercury even in solutions of 1 to 20,000 causes pain and the anti-bacillary action is not great" in gonorrheal cases. The conjunctiva, however, is not as sensitive as the urethra to this remedy, idiosyncrasy being excluded.

Freidheim had an unusual advantage of observation, in 1,200 cases of gonorrhea, difficult of cure by the ordinary plans, and in the laboratory of discovery of the gonococcus, his investigations were carried out on anti-bacillary lines, and his conclusions are worthy of our attention in so far as we can apply them to the treatment of the conjunctival inflammation. He tried to find out the best remedy that on local application would most completely *kill the gonococcus, lessen the inflammation, and promote epithelial desquamation.* The best[50] results were obtained from a solution of nitrate of silver varying in strength from 1 to 4000 (gr. ¼ to ʒi) to 1 to 2000 (gr. ½ to ʒi). Injections of the amount of 300 minims and retained for three minutes, were made three to six times daily, which were followed by increased and more purulent discharge: "But in about four days the secretion diminishes, becomes thin and contains a quantity of epithelium. The gonococci also diminish in a remarkable manner and after a few days disappear altogether. When this has taken place the number of injections of nitrate of silver is reduced to two and afterward to one daily, and other injections such as boric acid, or some preparation of zinc (or tannic acid) are used as well. But in spite of the almost total disappearance of the discharge the one daily injection of nitrate of silver is to be kept up for many weeks." Where nitrate of silver is not so well borne even in weaker solutions than those mentioned, a certain amount of success was gained by substituting solutions of "salicylate of mercury 1 in 270, with sodium chlorid, which completely destroys the cocci without much concomitant irritation." Other local remedies are referred to only to condemn, because of their uselessness as anti-microbics in permissible strength without producing undue pain and inflammatory reaction. "In the very rare cases in which no antibacterial injection could be tolerated internal remedies were resorted to." *The best preventive of complications was found in the use of nitrate of silver injections.* Neisser himself, at the recent meeting already referred to, when considering treatment, says that medicines should only be used which: "*a*, destroy gonococci; *b*, increase the inflammation as little as possible; *c*, have no injurious action upon the mucous membrane, such as solutions of nitrate of silver 1 to 1-4000 to 1 to 1-2000, ammonia sulpho-ichothyolate 1 to 100, sublimate 1 to 30000 to 1 to 20000." Thus science teaches what empiricism has long known by clinical experience, that of all remedies nitrate[51] of silver is the one *par excellence* for specific catarrhal inflammation of mucous membranes. Our therapeutics have scarcely advanced in equal ratio with our recent bacteriological progression, yet the foregoing observations are sufficiently exact to show us that *weak solutions of this favorite remedy are amply sufficient to destroy the gonococcus without endangering any of the ocular tissues, and without causing undue pain and inflammatory reaction.*

With the foregoing data as a guide I have long treated my conjunctival catarrhs with such satisfactory and rapid recoveries that now I care not whether they are specific or simple in character provided they are seen before complications of the eyeball impend, or have already occurred; provided also that my patient, or friends will intelligently favor and follow the treatment prescribed.

When seen during the incubative stage I regard with especial probability of a specific origin all cases of rapidly increasing conjunctivitis in the newborn; in females of every age and condition; in right eyes in right-handed, and in left eyes in left-handed adults.

If suppuration has already ensued; or, in adults, if inquiry elicits the information of a gonorrheal focus previous to the appearance of the eye inflammation, the diagnosis is without difficulty.

In all these cases free irrigation of the conjunctival sac, with thorough brushing of the tarsal portions and the retrotarsal folds is at once resorted to, generally without, but occasionally preceded by the use of a solution of cocain. It is largely a matter of choice, in my opinion, whether you use sterilized water, solutions of bicarbonate of sodium, or boracic acid, or the weaker solutions of bichlorid of mercury. The freshly made solutions of nitrate of silver of 1 to 4000 to 1 to 2000 appear to be of added advantage, and latterly I have, with increased satisfaction, *brushed into the affected membrane in the absence of ocular ulceration, a limited amount of a 2 per cent. solution of nitrate of silver, washing off all excess after the brushing is ended.* For a brush I cut off, evenly, half the length of fur of an ordinary camel's hair pencil, and find that the remaining stub is sufficiently firm for the purpose required. *The brushing is continued until the parts are thoroughly clean and free from all secretion.* Where cocain is not used, some pain is complained of, and continues for a time after each treatment. This can be prevented by the use of cocain before and during this short period of irritation. The ice cold applications of sterilized water, or weak antiseptic solutions on sterilized cotton, that are always applied in the foregoing lid and fornix inflammations, and used continuously between treatments and instillations, very quickly control any reaction due to the brush, and patients rarely complain of the method of treatment so great and rapid is the relief they experience from the severe eye symptoms of which they at first complained. In private practice daily brushings are carried out, but in dispensary cases where this is impossible it was found that when applied every second day the diseased process was rapidly controlled.

After two to four such thorough brushings the case is completely changed from a severe acute to a slight chronic inflammation with a corresponding decrease in the number of pus cells of the discharge. Further require-

ments are simple removal of the exudations and two or three applications, once in twenty-four to forty-eight hours, of a 1 to 2 per cent. solution of nitrate of silver, kept up until the reduced succulency of the mucous membrane and the decreased discharge call for the transient use of the usual astringent solutions.

If the foregoing method is adopted early enough and done thoroughly, complications never occur, and the duration of the infection is halved.

In those further advanced cases where adematous, thickened, and inflamed lid tissues prevent eversion of the upper lid, irrigation of the eye is as thoroughly accomplished as is possible, and where the cornea is intact, free use of two or three drops of a 2 per cent. solution of nitrate of silver, instilled into the conjunctival sac and the lids lifted from the ball so as to permit the remedy to reach the ultimate confines of the fornices, is the chosen plan of treatment. After waiting a few moments the eye is again flushed with simple diluent; and ice cold applications, and half hourly antiseptic instillations applied between daily office treatments.

The lid swelling is thus rapidly reduced so that turning can be accomplished in one to two days, and the described brushings resorted to. In those cases, when first seen, where complications of the eyeball impend, from lid-pressure causes, free canthotomy is done, because of its being the lesser of two evils. The part that the ocular conjunctiva plays in these specific inflammations appears to be different in its resulting exudate from that of the palpebral portion and that of the retrotarsal folds. The exudative inflammation of the latter is peculiar in the fact that its cellular elements are so numerous, whereas the chemotic exudation of the ocular, or scleral conjunctiva consists largely of fibrin-forming elements with some serum and few emigrating leucocytes.

A thorough believer in the bacterial pathology of to-day, and *recognizing the character of the exudate into the scleral conjunctiva in the chemosis of these cases, I consider as worse than useless, for the purposes of pressure relief of a threatened cornea, the scarification of this portion of the conjunctiva.* Knowing that, because of its connecting tear passages and on account of the presence of the ubiquitous pus microbe, it is practically impossible to insure aseptic operation of the conjunctiva under the best possible conditions of freedom from inflammation, as Fick,[52] in forty-nine perfectly normal conjunctival sacs, found only 12 per cent. without bacteria, and thirty-six others, affected with slight catarrh, contained them; knowing that an army of microbes, in these purulent cases, is only waiting a doorway of entrance, that fortunately the compact stratified epithelium of the scleral conjunctiva and cornea prevents, so that they can readily attack and overcome the tissues with greatly lessened physiological resistance on account of their impaired vitality;—how then can we expect to aid the nutrition by wounding without removing the fibrino-plastic exudate, and simultaneously opening up the lymph channels of the conjunctiva and subconjunctival spaces, these communicating with the same channels of Tenon's capsule, and those of the latter with similar lymph vessels within the sub-choroidal[53] space of the eyeball, the pus microbes thus finding a ready made entrance with a possibility of terminating the case in the form of a suppurative choroiditis and loss of the eye. This exudate may temporarily block the entrance way of the pyogenic microbes, but it is also the choicest soil for their growth and multiplication. *For these reasons incision of ocular tissues for therapeutic purposes ought only to be a dernier ressort in infective inflammations of the conjunctiva. Moreover, in all purulent cases where early, effective, rational treatment is carried out experience has shown that it is never necessary.*

In the intervals between the personal treatments of these cases half hourly to hourly instillations of solutions of boric acid 2 per cent. to 4 per cent.; solutions of sublimate up to 1 to 5000; and fresh solutions of the nitrate of silver 1 to 4000 to 1 to 2000 have been used for home treatment. Of the above solutions I prefer those of nitrate of silver, and use them in all cases where reactionary irritation is slight or absent and the cornea intact. Many cases are greatly benefited by their use three or four times daily, the milder solutions being used in the meantime.

Low temperature of the lids checks the multiplication of the microbes and continuous ice-cold applications soon reduce the swelling, pain, and increased temperature of the ptomaine-poisoned parts. These are used as long as the acute inflammatory stage continues, and are afterwards directed subsequently to each caustic treatment and kept up until the reactionary irritation has disappeared.

If when the case first appears there is ulceration and infection of the cornea sublimate solutions are chosen for irrigants, and, after cocainizing the eye, a 1 to 500 solution, on a cotton-tipped probe, is accurately and thoroughly applied to the ulcerated surface once daily, holding the application against the cornea for five to fifteen minutes. The sublimate is five times[54] stronger than carbolic acid as an antibacterial agent and the appearance of the eye after its use, as above, is free from that unsightly whiteness that carbolic acid, in its 95 per cent. solution, produces. All excess of solution is avoided and the eye is afterward irrigated. Where the cornea alone is involved, myotics are chosen as additional remedies, not on account of their mycotic action, but because, after a preliminary transient increase, they produce a decrease of the intra-ocular tension by contracting the blood vessels, thus decreasing serous exudation. In this way they sustain somewhat, if they do not actually increase the nutrition of the inflamed and softened corneal tissues (Ad.[55] Weber) by limiting pressure from behind. A mydriatic is the remedy where iritis or cyclitis impends, or has occurred, and in such cases only, because, after a preliminary reduction of tension, the intra-ocular fluids are increased by it, resulting in increased intra-ocular tension and added pressure from behind upon the inflamed cornea that will probably produce a staphyloma, and perforation of the latter. On this account a supportive compress bandage over the affected eye should in all these complicated cases be worn during the intervals of treatment. Paracentesis of the anterior chamber through the bulging cornea is never performed by me until perforation is assured, or positive, progressive, intra-ocular infection has supervened—for the reasons already given. Again, repeated[56] experiments and clinical observation have shown that the eyeball, like other parts, can take care of without injury, and overcome or absorb, a certain proportion of infective bacteria without loss of the organ. Once more, a[57] hypopyon is frequently

of non-microbic origin and its substance free from bacteria, and it is readily absorbed without damage to the eye. It is therefore in those cases only where the infection overcomes all resistance, either from the number or virulency of its microbes, that section is called for, and in these cases even, it can scarcely do more than relieve the tension pains of a panophthalmitic condition.

After the onset of ocular complications hot applications are used instead of cold ones, because they are more anodyne and comforting and less likely to further impair the decreased vitality of the tissues of the eyeball. I almost invariably advise them as hot as can be borne and applied with sufficient frequency and continuity to control all pain. They are used until reparative processes are well established. The antiphlogistic and supportive eye bandage is retained until the repaired cornea is again unyielding; as is also the myotic, unless contra indicated as above.

In one-eye cases the fellow eye is, where feasible, protected from the possibilities of infection by the usual eye shields.

Since instituting the foregoing treatment in my practice the lessened fear of cases of purulent ophthalmia has been conducive to increased personal comfort. Under it and when seen early the prognosis of simple and specific catarrh of the conjunctiva is practically the same. Where the treatment is faithfully carried out complications do not occur. The duration is greatly reduced. Where complications already exist, the only eyes that are lost are the ones, when seen, involved in a virulent, progressive and unencompassable ocular infection in which all therapeutics are without avail. The plan of procedure is but the compilation and application of facts gathered from numerous sources. Whatever originality appears has been born of careful observation and clinical experience, and with the sole desire to rationalize our treatment and enhance the value of our methods in the management of these often desperate cases. With full confidence I present this treatment for the consideration of those present, and feel assured that on its lines, faithfully followed, gonorrheal ophthalmia will fail to produce corneal complications in the usual three-fourths of the afflicted eyes and will equally fail to make blind the 40 per cent as found by Klein.[58]

CONCLUSIONS.

1. That all cases of purulent conjunctivitis are of microbic origin and due to Neisser's gonococcus.

2. That all cases originate from a gonorrheal focus, by devious paths, often, but not always traceable.

3. That those parts of the conjunctival sac having a cylindrical, or a modified cylindrical epithelium, viz.: the palpebral portions and that of the fornices, are the seats of election of the microorganism.

4. That the location of the gonococcus on the mucous membrane is at first *super*-epithelial, then *inter*-epithelial, and still later *sub*-epithelial and all combined.

5. That its special habitat is within the pus cell, yet it is also *extra*-cellular, as well as *intra*-epithelial.

6. That the associated inflammation of the adjacent lid-tissues is due to the lymphatic absorption of the ptomaines of the microbe.

7. That the compact stratified epithelial layer of the scleral conjunctiva and cornea is very resistant to the attack of the gonococcus.

8. That ocular complications are due to pressure necrosis, producing an *infection atrium* through which the streptococcus and may be the staphylococcus find ready entrance to tissues with greatly impaired physiological resistance, and often rapidly destroy them—resulting in perforation of the cornea, intra-ocular infection and loss of the eye. This is a secondary infection.

9. That the therapeutical indication is the mechanical removal or destruction of the gonococcus, with its ptomaine, and that if this is done early and thoroughly in the weeping stage, the period of acute inflammation will be cut short and the ocular complications avoided.

10. That it is well in the incubative stage, even without positive evidence of a gonorrheal origin, to regard with suspicion all cases of severe monocular catarrh, and especially so in the female, irrespective of age or condition, and to treat them as if due to the gonococcus.

11. That the mechanical removal of the discharges and the loosened epithelia and therewith the microbe and its ptomaine, *by thorough brushing of the palpebral conjunctiva and that of the fornices and* ample flushing of the conjunctival sac with simple diluents or weak microbicide solutions fulfills the etiological indication, and is non-injurious in all severe cases of *simple* catarrhal conjunctivitis.

12. That of all local remedies nitrate of silver is the most potent and, at the same time, least irritating microbicide we possess. It prevents complications, and can be used in sufficient strength to destroy the gonococci without risk of injury to *intact* ocular tissues, and that solutions of greater strength than 2 per cent. are unnecessary.

13. That in cases, when first seen, where complications already exist, brushing of the palpebro-fornix conjunctiva should be resorted to with thorough frequent irrigation of the conjunctival sac,—preferably with sublimate solutions up to 1 to 5,000. If undue lid-pressure exists *free* canthotomy is advisable; but scarification of the sero-fibrino-plastic chemosis of the scleral conjunctiva does not relieve exudative pressure on the ocular tissues, and it opens the doorway for secondary infection with pus microbes and is a dangerous proceeding.

14. Where the cornea alone is inflamed, the added guarded daily use of a bichlorid solution 1-500 to the infected area is the best treatment; together with myotics, not on account of the latter's mycotic action but because, after a preliminary increase, they reduce intra-ocular tension by contracting the blood vessels and diminishing serous exudation, and thereby they improve the nutrition of the ulcerated, softened corneal tissues. *Paracentesis* of the anterior chamber, through the bottom of the ulcer, *is called for only in those cases where perforation impends, or where positive, progressive, intra-ocular infection exists.*

15. The use of a mydriatic is best limited to those complicated cases where the uveal tissues are threatened, or inflamed, because, after a preliminary reduction, it increases intra-ocular tension by impeding the outflow of fluids from the eyeball, thus resulting in increased posterior pressure on the softened cornea,—impairing nutrition and aiding bulging.

15. A supportive compress bandage is antiphlogis-

tic and of great use in preventing staphylomatous results in complicated corneæ, and its use ought to be continued until the healed cornea is again unyielding.

17. Ice-cold applications check microbic multiplication, and ought to be used *assiduously* to the end of the acute stage, or until ocular complications ensue. After the latter occur, applications as hot as can be borne are more comfortable and more conducive to the improvement of the nutrition of the impaired ocular tissues.

18. As a prophylactic in monocular cases, the other eye ought to be sealed against infection; and the risks to others, from these cases, thoroughly advertised.

19. The treatment of the initial focus of infection, where ascertainable in the affected subject, must be rigidly carried out on the same lines, and simultaneously with the conjunctival inflammation.

16 Laflin Street.

ARE AMERICAN WOMEN PHYSICALLY DEGENERATED?

BY EDMUND ANDREWS, M.D., LL.D.
PROFESSOR OF CLINICAL SURGERY, CHICAGO.

Some wild errors are afloat on the subject of woman's supposed degeneration. In the October number of the *North American Review* Dr. Cyrus Edson, Commissioner of Health for New York, gives a horrible picture of American feminine "deterioration."

He says that "there is at the present moment in this country a condition existing among the women which is the cause of the greatest alarm." It begins, in his opinion, in the schools, where by ambition and by rewards for success and disgraces for failure, growing girls are goaded to a disastrous amount of mental strain and over-brain work. "Thus stimulated they drive their brains and do the work" until their physical powers are wrecked, and in an "enormous number of cases . . . the women have broken down as the result of a lack of stamina sufficient to meet the physical strain of child-bearing." Again he says: "An increasingly large proportion of the women of the American race are unable to perform their functions as mothers." . . . "We seem to be able to bring the women up to a certain point in mental development, and then they cease to be able to be mothers." And again he says it is a "fact that an enormous and increasing number of our women are so exhausted physically" (by over study) "before marriage that the birth of one child, or at most of two children, leaves them physical wrecks."

Again Edson says: "Let me briefly state facts as they are. An American girl, educated as it is our pride to educate her, marries the man of her choice amid the warm good wishes of all her friends. She is clever, bright, beautiful. . . . One, or at most two children are born, and if we meet her we scarcely recognize her. She looks dragged and worn, she is fretful and peevish, she has become a burden to her husband. . . . . worse than all, because it is the cause of all, she is a confirmed invalid."

Now this does not convey a correct impression. The Doctor, if he does not quite say it, leaves the average reader to infer that an "enormous number" constituting a "large proportion" of the American women become "physical wrecks" and "confirmed invalids" after bearing "one, or at most two children."

Myself, and three friends while talking over these gloomy assertions, determined to "sample" the community, and see how many of the women known to us had become "physical wrecks" after bearing "one or at most two children." Each of us have an extentensive acquaintance, not only in and around Chicago, but among families now located all the way from the Atlantic to the Pacific ocean. With pencil and paper we jotted down all the families whose condition we knew, mostly of New England, New York, Pennsylvania and Ohio origin. In short, they were nearly all purely American in blood. We took them all impartially, sick or well, without selecting or rejecting on account of health.

By a very moderate amount of conference together, supplemented by a little inquiry, we readily made a list of 163 families in which the mothers had borne from one to thirteen children. Classifying them according to their health we found the facts as follows:

1. Fifty-two mothers had borne from one to thirteen children each, and came out with robust, magnificent health; better than that of average men or women. Three of these had borne respectively eleven, twelve, and thirteen children, and came through in brilliant health. In fact the women with large families seemed on the average to come out the best.

2. Ninety-five mothers, who had borne from one to eight children each came out in good, average, nice health, without being, however, so robust as the first class.

3. Eleven were delicate, but not great sufferers.

4. Five were confirmed invalids.

No class of men or women is totally exempt from sundry ills, and occasional deaths, but we could not find a single one physically wrecked by childbirth in a constitution exhausted by over study. We found several who had been delicate before marriage, and became robust after bearing children.

When deaths occurred among these generally healthy women, it was from the occurrence of mechanical injuries, typhoid fever, consumption, cancer, pneumonia, etc., and not from previously exhausted systems "broken down under the physical strain of child-bearing."

These women, had already at the time of our enumeration produced about 545 children which averages over three and a third to each mother, and as many of them are still young, and nearly all healthy, they will yet add many more to the list of offspring.

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37 Paris Cor. of the JOURNAL AM. MED. ASSOC. quoted by the Medical Record, Nov. 3, 1888, p. 552.

38 Gaz. des Hôpitaux, Oct. 13, 1891, quoted by Medical Record, March 26, 1892, p. 347.

39 Quoted by Noyes, loc. cit. p. 299.

41 and 42 Noyes, loc. cit., p. 300.

43 H. Knapp, loc. cit., pp. 45, 46, pus microbes.

44 H. Knapp, Arch. of Ophthal., March, 1886, p. 46.

45 Noyes, Dis. of the Eye, 1890, p. 213.

46 A Treatise on Dis. of the Eye, J. Soelberg Wells, 1883, p. 148.

47 Arch. Med. Bulges, editorial, Med. Record, May 26, 1888, p. 586.

48 Medical Record, Sept. 19, 1891, p. 347.

49 Provincial Med. Journal, Jan. 1, 1890, from Arch. für Dermat. and Syph.; also Med. Record, June 21, 1890, pp. 708–9.

50 Analysis in British Medical Journal, l. c.

51 Weeks' paper, Medical Record, Aug. 3, 1889, p. 114.

52 "Ueber Microörganismen un Conjunctivalsack," Weisbaden. 1887. From Noyes, loc. cit., p. 212.

53 Schwalbe, quoted by Meyer, Dis. of the Eye, 1887, p. 618.

54 See paper by Weeks, Medical Record, August 3, 1889, pp. 113-14. In recently published lectures in the London *Lancet*, Sir Joseph Lister regards carbolic acid used by his methods, as possessing greater germicide qualities than corrosive sublimate. For eye uses, if not generally, we are incredulous of the scientific accuracy of this conclusion.

55 Meyer, Dis. of the Eye, p. 75, Ed. 1887. 56 H. Knapp, loc. cit., p. 44.

57 Ibid, pp. 43-5. 58 Noyes, loc. cit., p. 310.

On the whole, we finished our extempore study with a cheerful conviction that the women are for the most part all right, and can be depended on to replenish the earth and rule in it in the future as they always have done in the past.

No. 6, 16th Street, Chicago.

GOLD IN THERAPY.

Read at the Meeting of the Mississippi Valley Medical Association, Oct. 4, 1893.

BY E. A. WOOD, M.D.
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Gold is one of the old remedies which has been crowded to the wall by the more brilliant achievements of modern pharmacy. It is safe to say that one-half the medical profession never prescribe gold; the large body of the other half use it occasionally, while a very small minority employ it constantly in the class of cases in which it is best suited.

Gold, practically, to the main body of the profession, is a new remedy. From the company it has fallen in with of late, gold is open to suspicion, and whether it is a partner in the "Keeley Cure" or not, many will be prejudiced against it. It would seem timely and just to drag the old drug from its dusty closet, and tear it away from its bad company that we may learn what standing it really deserves in therapeutics.

What, then, is the pathological condition in which gold is especially indicated as a curative agent? Let us answer this question with as much precision as possible. If gold has a place in therapy it must fill a special place, for it, like all other drugs, is no universal panacea. What is its place?

What say authorities in reply to this question? In view of its great age, it is astonishing how meager the literature. It is still more astonishing that until within a very recent period we had practically but one preparation of gold—the chlorid of gold and sodium. That preparation to-day is the one given, and by it the standard of gold is rated as a curative agent. Gold is as old a remedy as mercury, and yet gold to-day is almost unplaced in therapeutics. The compounds of mercury are legion, its history voluminous, and its therapy accurately known and established. We know more perhaps about mercury than about any other drug; we know less of gold than of most drugs.

Authorities agree in declaring that the chlorid of gold and sodium is an alterative, behaving very like mercuric chlorid. No author gives gold a very wide range in therapy; no one attempts to name the exact pathological condition in which it is best indicated and most efficient; and nearly all who have written on gold in therapy, whether designedly or not, succeed in "damning it with faint praise." Syphilis is one of the diseases in which it is commended, some say in the secondary lesions, others that it is best suited in the tertiary form. The praise given gold in syphilis is not high, certainly not so loud as the praise given mercury. It is said to be aphrodisiac and emmenagogue. Tabes dorsalis, cirrhosis of liver, lungs and kidneys are said to be cured by gold. Some praise it in diseases of the glandular system, especially in disease of the glands of the stomach and intestines, increasing appetite, and promoting secretion, digestion and nutrition. It is said to give force to brain action, to give courage to the despondent, hope to the hypochondriac, and content to the melancholic. All speak of it as affecting the gums without salivation, producing an eruption of the skin and gold fever. The latter I have never seen.

That is the sum and substance of what therapeuticians say of the chlorid of gold and sodium. But there are three questions which are still unanswered: First, is the chlorid of gold and sodium more efficient in the lesions named than any other drug? Second, is gold in therapy limited to the one double salt? Third, what is the special pathological condition in which gold is most efficient as a curative agent?

Leaving out the first question for the present, I shall undertake to answer the other two as observation and experience have taught me.

My more immediate purpose is to direct your attention to some preparations of gold other than the chlorid of gold and sodium, samples of which are before you.

The first preparation I shall notice, and the one with which I am best acquainted, through prescribing it for the past seven months in the place of the double salt, is the liquor aurii et arseni bromidi. The successful combining of gold with bromin, mercury, arsenic and other metals, is owing to the indefatigable labors of Dr. W. F. Barclay of Pittsburg, who persevered in face of the decree of some chemist that such compounds are impossible. There stands the liquid bromid of gold and arsenic. There stands the liquor of gold and mercuric bromid. Here are other preparations of gold combined with other metals. As there is no filtering employed in the manufacturing of these liquors, every atom of the metals must be present. The two liquors are, as you see, beautifully red and transparent, elegant as the garnet fluids in the show bottles of a druggist's window. I am not sure that it will not fade under exposure to light, but I know that after months standing not a shadow of sediment mars its complete transparency. It is almost tasteless. The dose—10 drops—contains one thirty-second grain of gold and one-sixteenth grain of bromid of arsenic. The mercuric bromid of gold contains one thirty-second grain each of gold and bromid of mercury to 10 drops, which is the dose. Each preparation is pleasant to take, is more readily absorbed than the chlorid of gold and sodium and, in my experience, more assimilable and active than the double salt. Of course the gold is modified and its action intensified by the combination with other metals. It is probable that gold will readily combine with all other metals used in therapeutics.

The class of diseases in which I have found gold to be peculiarly efficient, and in which it seems to be especially curative above all other drugs, is that class in which *sclerosis* is the chief factor. In naming scleroses as a class, I am perhaps taking undue liberty with the nomenclature of the pathologist, since the term sclerosis is generally understood to mean induration of the tissues of the brain and spinal cord. Literally, it is proper to apply the term sclerosis to any organ or tissue in which induration is the factor. When we marshal such pathological conditions into a class, we shall find that sclerosis has a wider and, it seems to me, a more significant meaning than hitherto attached to the word and the lesions it names. It would seem as though we have reduced therapeutics to an exact science when, instead of a name, we establish an

exact pathological condition, with the remedy most efficient in removing that condition. That is the exactitude we have in gold as a special curative agent in all forms of sclerosis.

Cirrhosis of the liver, interstitial nephritis, atheroma and its associate, calcareous degeneration of the arteries. The circumscribed induration following embolism or bloodclot in the brain tissue, senility and its train of decrepitudes—for what is old age but a general sclerosis—all belong to the class I have named. Cirrhosis of the lungs, certain forms of consumption—fibroid consumption, miliary tuberculosis, and especially that form of consumption in which masses of lymph become organized in the lymphatics of the lungs as we see the process in the glands of the neck and called adenitis. Without naming all the lesions that may be classified under the head sclerosis, I will state, as my belief, founded on an experience of twenty years, that gold is far more efficient in them all than any other drug I know of. I desire to say in addition that the liquid preparations of gold as combined with bromin, arsenic, iodin and mercury are as much superior to the chlorid of gold and sodium as is quinin over the crude Peruvian bark.

In addition to its efficiency in the sclerosii it would seem as though gold, at least the liquor aurii et arseni bromidi, exercises a power as a tonic and nutrient to the nervous system, especially to the nervous systems of those who have advanced to fifty and beyond. May it not be that in cases of neurotic diseases of the aged there is a sclerosis? Certain it is that gold is not so efficacious in functional nervous ailments of the young. It is just to remember, too, that the association of gold with bromin and arsenic may have very much to do with its curative powers. But for all that, gold and its preparations is the medicine for those in middle life and in old age. It stimulates the brain, incites a flow of spirits, gives sleep to the sleepless, courage to the despondent and intensifies sexual desire and power. Gold should maintain physical vigor and prolong life even if taken when there is no disease except the inherited tendency to decay before reaching the Bible limit of life.

In presenting a few cases taken from my clinical day-book I beg leave to remark that I appreciate incredulity, and with that thought before me I am guarded in my statements, feeling that a modest conservatism will be tolerated by you, whereas you would smile at and ignore the vivid praises of the enthusiast.

E. H., aged 57, roofer, temperate with good heredity and void of syphilis or any cachexia. Had complained of what he was told was rheumatism of the knee-joints since February, 1892. Visits to seashore, and Mt. Clemens, together with medication from various physicians, did not arrest the disease which grew steadily worse. On the 14th of May last I saw him with Dr. Barclay. His knees were swollen, stiff and painful, preventing rest or sleep. He preferred to have his legs amputated rather than endure his agony. We diagnosed the case as *Arthritis Deformans*, and put him on the liquor aurii et arseni bromidi. In six weeks time he pronounced himself cured, the pain and stiffness were gone and the swelling was very much reduced. He still remains well up to date.

R. E. M., aged 45. Heredity good. Having treated him for a year for locomotor ataxia, by suspension, ergot and other usual remedies, I placed him on the liquor of gold last July. He sleeps better, appetite improved, not so despondent; the girdle pain and the pain in feet is very much abated, but there is no improvement in the coördination. He is still taking the gold.

C. T., periodical dramdrinker. Took the gold two weeks, at the end of which time there were ulcers in the mouth and the teeth in lower jaw were loosened.

M. Mc., aged 52. Heredity good. Very fond of women and noted for his sexual powers and endurance. Had suffered for eighteen months with neuralgia of the left trifacial nerve. Had tried various forms of treatment, among others that of having the sound teeth extracted from the left lower jaw, but without relief. Speaking was painful, mastication impossible and swallowing of liquids agonizing. He was haggard with pain and loss of sleep. In spite of his protest. I treated him for syphilis by giving him mercury and the iodid of potassium. He improved very considerably, but the pain persisted though to a slight degree, and grew worse on stopping the mercury. In June last I put him on the mercuric bromid of gold, with rapid improvement, and he pronounced himself cured. He still takes the gold occasionally.

I have administered the bromid of gold and mercury in two cases of iritis with evident advantage.

Two cases of fibroid consumption, with cavities, both the result of neglected pneumonitis, are astonishingly improving under the use of the bromid of gold and arsenic internally and the inhalations of papoid glycerol by the atomizer.

One case of pneumonokoniosis, "grinders' consumption," had resisted treatment for four years, during which the patient lost in weight while cough and expectoration increased. In July I put him on the bromid of gold and arsenic with papoid inhalations. September 27, coughs a little on rising in the morning, expectoration no longer black. Gained fifteen pounds in weight.

One case of miliary tuberculosis in which the pulse was 130, temperature 101, respiration 30, is rapidly improving on the gold.

Two cases of diabetes have improved under the use of gold, one of them so much so that he was accepted last August as a good risk by one of the foremost life insurance companies. In both cases I gave codein at the beginning of the treatment, but left it off and continued with the gold.

A case of adenitis, with enormous enlargement of left side of neck, is being rapidly cured by the bromid of gold and arsenic.

Does gold ever fail to cure? Yes, if given in cases unsuited for it. But in the scleroses, while it may fail, it will accomplish more cures than any other remedy.

POINTS OF DISSIMILARITY BETWEEN US AND HOMEOPATHIC PHYSICIANS.

An Address read before the Lancaster City and County Medical Society, July 5, 1893.

BY J. L. ZIEGLER, A.M., M.D.
PHILADELPHIA.

Mr. President and Gentlemen:—The JOURNAL OF THE AMERICAN MEDICAL ASSOCIATION for May 27, 1893, publishes the annual address of the President of the Philadelphia County Medical Society, read May 24, 1893, by Jno. B. Roberts, A.M., M.D., entitled "Points of Similarity Between Us and Homeopathic Physicians."

Dr. Roberts believes "that the tests of qualification for membership (in the Philadelphia County Medical Society) should not be the college from which the applicant received his diploma, but an education enabling him to understand and appreciate the science of medicine, and an honest purpose to treat his patients by all means and methods which experience, investigation and research show to be serviceable."

Admitting the proposition to be true, then one who graduates from the Hahnemann Medical College, and desires to become a member of the Philadelphia County Medical Society, would have to repudiate his college and the doctrines it inculcates, or practice a gross fraud upon the community and the society with which he desires to connect himself.

He further endeavors to show our similarity because we both "are law abiding citizens," that "we meet each other in drawing-room, mart or amusement hall, to find no difference in courtesy, refinement or large-hearted charity." All of which does not substantiate our similarity as physicians, but is mere sentimental exuberance.

He regrets "that a marked similarity exists between the ignorant and half-educated graduates of all kinds of medical colleges." In these regrets we most heartily agree. He continues to demonstrate our similarity by giving a list of textbooks recommended officially, to be used in the Hahnemann Medical College of Philadelphia, and that they are the same as those used by our own schools, showing clearly that the college training of our students is very similar, but the Doctor forgets to give us the textbook of the institutes of medicine.

"The teaching of this branch by Prof. Dudley includes the relationship existing between the methods employed by the physician and surgeon and the objects sought to be obtained; in other words, the principles which determine and direct all therapeutics, whether preventive, palliative, curative or reparative. The major part of the course will be devoted to instruction in the principles of Hahnemann's *Organon*—with the scientific arguments upon which homeopathists base their acceptance of the Law of Similars, and the facts and statistics by which its efficacy and superiority are demonstrated." (*Forty-fifth annual announcement of the Hahnemann Medical College for 1892-1893.*)

What the principles of Hahnemann's *Organon* are will be noticed hereafter.

Again the Doctor says: "A very striking similarity between us and our homeopathic neighbors is the latitude of opinion exercised in the choice and administration of drugs. Many thoughtless persons believe that we give only large doses, homeopaths only small ones; that we do not use powders or triturates; that they do not write prescriptions or administer alcohol or opium. Nothing is easier than to show the fallacy of these statements."

As to the choice and administration of drugs, there is no doubt as to the fact that the homeopaths use the same drugs that we do. But here the similarity ends. They doubtless use many drugs that we do and some that we do not, but they use them in such infinitesimal doses that the mind can not appreciate even by comparison their minuteness.

To illustrate, let me quote a portion of the *Organon*: "To serve the purposes of homeopathy, the spirit-like medicinal powers of crude substances are developed to an unparalleled degree by means of a process which was never attempted before, and which causes medicines to penetrate the organism and thus become more efficacious and remedial." "It is applicable even to those substances which in their crude state do not evince the least medicinal effect upon the human body. Thus two drops of the fresh vegetable juice mixed with an equal proportion of alcohol, and diluted with 98 drops of alcohol, and potentiated by two succussions of the hand—this is the first development of power (potency). The same process is then to be repeated with 29 successive vials, each vial to contain 99 drops of alcohol, filling three-quarters of the vial; this second vial is then to be shaken twice, and so on to the thirtieth development; this is the potentiated decillionfold dilution, and the one to be commonly used." (*Hahnemann's Organon*, page 178.)

Dr. Garrett in his work on "Myths in Medicine" calculates the quantity of alcohol required to reduce one drop of crude juice to the sixth potency to be 1,356,336 large hogsheads of 120 gallons each.

Imagine for a moment the quantity of alcohol required to reduce the same to the thirtieth potency!

In reducing powdered substances (I should say increasing "the spirit-like medicinal power of crude substances"), sugar of milk is used instead of alcohol, and it may be safely said that since the days of Hahnemann, and if homeopathy should exist one thousand years hereafter, not enough sugar of milk could be manufactured to reduce one entire grain of a crude drug to the thirtieth potency. But you say this is an exaggeration. Let me explain: the first potency is made by taking one grain of any drug and adding thereto 99 grains of sugar of milk, and after a number of triturations and succussions we have the first potency, one grain of which contains the 1-100 of a grain of the crude drug; the second potency is made by taking one grain of the first potency and adding thereto 99 grains of sugar of milk (rejecting the remainder), and after triturating and shaking we have the second potency, one grain of which will contain the 1-10000 of a grain of the crude drug—by repeating the process, always taking one grain of the last potency until the thirtieth potency is reached, which is the one Hahnemann recommends to be most frequently employed, although some enthusiastic homeopaths continue the process to the two and three hundredths potency. Hahnemann says in a note on the preparation of fluid medicines that "desirous of employing a certain rule for the development of powers of fluid medicine, I have been led by manifold experiences and accurate observations to prefer two instead of repeated strokes of succussion for each vial, since the latter tended to potentiate the medicine too highly." (*Organon*, page 221.)

I have made an accurate calculation of the quantity of sugar of milk required to reduce one grain of any crude drug to the sixth potency, and find that it would require 701,423 tons, and that the actual quantity of the crude drug contained in the thirtieth potency is represented by this fraction; 1-1000000000

of the human race for thousands of years, and these would never have prevailed to such an extent, had physicians endeavored rationally and zealously to cure and eradicate each miasm by internal homeopathic treatment, and well selected medicines, instead of tampering with their local symptoms by topical applications."

I believe the itch insect was not discovered when Hahnemann invented his system; it has since been demonstrated to be a very lively "spirit-like force or dynamis," a very inveterate sort of "nonentity," a "materia morbi" come to plague the homeopathists—what a terrific scratching among the faithful! and then the typhoid bacillus, the comma bacillus of cholera, the pneumococcus, the gonococcus and a host of other cocci's that have come to disturb the equanimity of the spirit-like homeopathic afflatus; but then these are only spirit-like nonentities, a sort of miasm so to speak, to be cured, eradicated and stamped out by smelling a homeopathic pellet about as large as a mustard seed more or less, moistened with the thirtieth potency of some anti-psoric, anti-sycotic or anti-syphilitic as the case may be. But seriously what of the law of similars, the great concentrated principle of homeopathy, the "similia similibus curantur," the one great law of the system? and here let me remind you that this is the principal feature which makes us to differ, and which Dr. Roberts believes to be of so little importance that we could easily coalesce, join the same medical society, meet each other in consultation, and take each other by the professional hand as brothers pursuing the same noble calling.

This dogma is based upon the supposition that there are three sources of disease depending upon the existence of three miasms (syphilis, sycosis, and the itch,) and that they are antagonistic; that is if a syphilitic disease and apsoric disease exist at the same time in the body, that one or the other will be held in abeyance in the body until the one that has the precedence shall have expended its force, when the other will manifest itself; but if they should be similar, that is both psoric or both syphilitic, then the stronger will eradicate or cure the weaker, and thus effect a spontaneous cure—hence Hahnemann inferred that drugs prepared and administered homeopathically that are capable of producing symptoms in the healthy body similar to the symptoms of the disease, do eradicate the actual disease. He says: "Consequently experience leads to the undeniable conclusion that the living human organism is far more disposed and inclined to be affected, and to have its feelings altered by medicinal powers than by other noxious agencies and contagious miasms, or to express the same in other words: *Extraneous, noxious agencies possess a subordinate and often extremely conditional power; but drug potencies possess an absolute unconditional power* far superior to the former in *ability* to produce ill health (morbid discordancy) of the human body (*Organon*, page 76, Sec. 33). Again:

"The greater intensity of artificial disease produced by drugs, does not constitute the only condition of their ability to cure natural diseases. In order to perform a cure, it is necessary that drugs should possess the power of producing in the human body an artificial disease, *most similar to that which is to be cured;* for it is by virtue of its similarity, combined with greater intensity, that the drug disease is substituted for the natural disease, thus depriving the latter of its power to affect the vital force. This is true to such an extent, that even nature herself is unable to cure an older disease through the accession of a new *dissimilar* affection, even of greater intensity, nor can the physician perform a cure by means of drugs *incapable of producing in the organism a diseased condition similar to that which is to be cured.* (*Organon*, page 76, Sec. 34.)

"All these examples prove that neither the efforts of nature nor the physician have ever been able to extinguish or cure a disease by means of a dissimilar morbific potency, however powerful; but they prove that according to eternal and irrevocable laws of nature which were hitherto misinterpreted, cures are made to result *alone from morbific potency which is similar in symptom and somewhat superior in strength.* (*Organon*, page 88, Sec. 48.) Again he says: "The true homeopathic method of cure is the only correct, the only direct and the only possible means to be employed by human skill, as surely as it is possible to draw but one straight line between two given points." (*Organon*, page 92, Sec. 54.)

This is a very strong and positive assertion, but how does Hahnemann know of this certainty, of the potency of drugs—he tells us that it is proved by actual experiment upon the healthy human body—not by appreciable doses but by highly attenuated potencies or dilutions. This is the last great fallacy of the system, and is best explained in Hahnemann's own words. He says: "Medicines should, therefore, be distinguished from each other with scrupulous accuracy, and proved by pure and careful experiments with regard to their powers and true effects upon the healthy body. For upon the accuracy of this test (proving) depend life and death, sickness and health of human beings. The test should be so conducted as to result in the acquisition of accurate knowledge of drugs, as well as to avoid every mistake in using them in diseases; for the unerring selection of remedies is the only condition for the speedy and permanent return of health of body and soul, the highest gift bestowed on man." (*Organon*, page 125, Sec. 120.) Again: "The most recent experiments have taught that crude medicinal substances, if taken by an experimenter for the purpose of ascertaining their peculiar effect, will not disclose the same wealth of latent powers as when they are taken in a highly attenuated state, potentiated by means of trituration and succussion. Through this simple process the powers hidden and dormant, as it were, in the crude drugs, are developed and called into activity in an incredible degree. In this way the medicinal powers, even of substances hitherto considered inert, are most effectually developed by administering to the experimenter daily from four to six of the finest pellets of the thirtieth potentiated attenuation of one of these substances; the pellets having been previously moistened with a little water, should be taken on an empty stomach for several days." (*Organon*, page 127, Sec. 128.)

The only answer to this attenuated absurdity would be to pass it over in silence, were it not that (in the latter part of this nineteenth century) a professor occupying the chair of the institutes of medicine devotes the major part of his time to prove the efficacy and superiority of the Hahnemann method of treatment, and that we are asked by the president of the Philadelphia County Medical Society to lay aside our manhood and unite in consultation with the disciples of this finely spun moonshine.

Let us examine the doctrines in the abstract—doctrines upon which the whole superstructure of homeopathy is built:

1. Disease is caused by a spirit-like force; a dynamis.
2. All diseases (not subject to surgical skill) arise from three miasms, namely: syphilis, sycosis and the itch.
3. These three miasms are antagonistic.
4. That drugs properly potentiated are capable of causing similar diseases in the healthy human body to a greater extent and are always more powerful than this dynamis.
5. That this power is proved by the administration of drugs (properly potentiated) to the healthy body.
6. That this power possessed by drugs is capable of removing disease, when given in attenuated doses, by causing a similar but more powerful drug disease.

This is the whole system of homeopathy expressed in a few words. But we may abridge this system still further into two propositions, viz: 1, that disease is a spirit-like force and not a materia morbi; 2, that drugs possess (when properly attenuated and potentized) the power or spirit-like force to produce a similar drug disease, but always more powerful, thereby expelling the actual disease—that is, one evil spirit expelling another evil spirit—Satan casting out Satan. But the good Book tells us that a house divided against itself can not stand, but must fall. As already stated, the discovery of the itch insect and the many demonstrations of the bacteriologist effectually refute the first proposition, and as the second depends upon the first,—in fact, all the propositions are dependent upon the spirit-like force, both as a cause and a cure of disease,—nothing remains of homeopathy but the name; no sensible person can believe such fatuous extravagances.

But Dr. Roberts says that "If the action of homeopathic medical societies, of homeopathic medical journals, and the spoken and written statements of homeopathic physicians are examined, it is evident that very many of those whom the public regard as homeopathists have comparatively little faith in the infinitesimal doses of Hahnemann or in the infallibility or universality of his law."

I am fully aware of this fact, but it only proves the fraudulent practices of the homeopathists.

Their pretended adherence to the homeopathic system—calling themselves homeopaths and at the same time using our medicines in the same appreciable doses and attributing their cures to homeopathy, is a gross fraud upon the community.

No one objects to their practicing the system pure and simple—they well know that homeopathy would not exist to-day if they would practice it as laid down by Hahnemann,

although they use his *Organon* as a textbook and teach its principles as superior in their efficacy. Hahnemann despised such physicians, who practiced both systems. He says: "Who would honor this careless and pernicious class with the name of homeopathic physicians after the salutory art? May their just rewards await them, that if ever sick they may be cured after their own fashion." (*Organon*, page 207).

Hahnemann was sincere; he believed our system to be pernicious and homeopathy the only possible method of cure; he denounced our method as wrong in toto.

Almost every page of the *Organon* has dire allusions to the effects of the old school practice, which he alleges produces an incurable drug disease, and he expresses his gratitude to an all-wise Creator who has allowed homeopathy to be discovered. Now, his pretended followers almost worship Hahnemann. They build colleges and call them after his name; they rear monuments and statues to his memory everywhere; they sing loud praises of his virtues; they make his great work, the *Organon*, their textbook; then they fill their medical cases with every variety of old school drugs, practice our system under the cloak of Hahnemann, and thus impose on a credulous public. Language is inadequate to express my contempt for such procedure. "I had rather be a dog and bay the moon than such a Roman."

The president of the Philadelphia County Medical Society pleads for their reception in our medical societies, excuses their practice of the *similia similibus curantur* and their silly dilutions as so small a matter that we should embrace them as brothers. Methinks I see the ghost of Hahnemann smile at the humiliating picture. Dr. Roberts quotes from homeopathic journals and homeopathic writers to show our similarity. He says: "This rather lengthy series of quotations from homeopathic writers has been made to establish my point; that we and most of them are for all practical purposes similar and at one. They, as well as we, are free to choose whatsoever is thought to be the proper remedy for a diseased condition, and to give it in whatsoever dose is considered curative." If such be the case, and we do not doubt it, let them abandon the name of homeopathy, practice rational medicine and show fruits meet for repentance. Let them cease to oppose legislation and to demand a separate board of medical examiners. If they are sincere and so near similar to us that Dr. Roberts can see no difference; if, after practicing their silly nonsense for nearly a century, and by every subterfuge endeavoring to convince a credulous public that their method of treatment is the only true and positive method of cure, they are now beginning to see its folly, let them come to us in a legitimate manner by acknowledging their error and cease to teach their dogma of *similia similibus curantur* to their students. We are not under obligations to them, nor will we "crook the pregnant hinges of the knee where thrift may follow fawning." The gist of this matter is a paving the way toward a revision of the Code of Ethics, so as to allow a few specialists and those who hunger after the almighty dollar in the way of consultation fees to consult with homeopaths without violating the Code. It behooves the profession to watch these men and not let them touch the Code by way of revision. It is good enough for all, and its provisions prevent no one from pursuing a gentlemanly, true and honorable course.

THE DISSIMILARITY BETWEEN PHYSICIANS AND HOMEOPATHISTS.

A REPLY TO THE PRESIDENTIAL ADDRESS OF DR. JOHN B. ROBERTS.

Read before the Philadelphia Medical Society, Oct. 11, 1893.

BY SOLOMON SOLIS-COHEN, M.D.

PROFESSOR OF CLINICAL MEDICINE AND APPLIED THERAPEUTICS IN THE PHILADELPHIA POLICLINIC; ONE OF THE PHYSICIANS TO THE PHILADELPHIA HOSPITAL.

This communication is presented at the request of a number of members of this Society who desire a record to be made of their dissent from some of the views advanced by Dr. Roberts in his paper entitled, "Points of Resemblance Between Us and Homeopathic Physicians." The subject matter having been discussed by me at length in a paper read before the Society some years ago,[1] I may be pardoned for confining myself on the present occasion to a brief review of a few of Dr. Robert's "Points" and to the introduction of but one counter-point.

[1] Proceedings, vol. ix, p. 278, 1889. The Medical News, Philadelphia, Oct. 19, 1889.

I have read somewhere an apologue which, slightly modified to suit the present occasion, runs thus:

In the country of the Houhnhyms, concerning which land, its inhabitants and their customs, an interesting and reliable account has been left by the late learned and ingenious Gulliver, there was at one time an agitation in favor of what was termed "liberalization of the Constitution." In furtherance of this movement there was presented to one of the scientific societies, by an eminent and thoroughbred stallion, a very able paper entitled, "Points of Resemblance Between Us and Jackmules."

With the great generosity and candor which were its author's characteristics, this paper, while admitting that all mules were not alike, and that the earlier breeds had been quite obnoxious, yet claimed that in recent times a great change had taken place; that, indeed, mules were becoming every day less mulish; and it counted in favor "of the great body of mules at the present time," even down to the least fraction of an inch by which their ears had been shortened, and the last hair in the little bunch at the end of their tails, every point wherein they had never so slightly departed from the anatomy of the more lowly line of their parentage, and approached to the form and features of the noble line that they shared with the speaker. Many of the younger Houhnhyms were moved by his eloquence to respond to the generous impulses of the advocate of fraternization; and it appeared as if his views might prevail. At this juncture a veteran "stud" arose, and with great gravity and deliberation spoke about as follows:

"My noble friend has shown most clearly and convincingly that many Jackmules have done their best to imitate Us. Let me even admit for argument's sake that he has succeeded in establishing many points of similarity. But he must grant me permission to call attention to one point of difference. There never was a mule yet but he was sired by a jackass."

Dr. Roberts pays a handsome and well-deserved tribute to the personal and social qualities of educated homeopathists. I can cordially indorse all that he has said upon this topic. The question of scientific or ethical truth, however, is an impersonal one, and should be so considered. The fact that Washington was a slaveholder did not make slaveholding right; and neither the high character of Dr. Roberts, nor that of many members of the homeopathic fraternity can make white black or black white, make straight that which is crooked, or make crooked that which is straight.

The question before us is one of simple honesty, and to decide it needs neither learned citation of authorities nor casuistical subtleties. Either the name, "homeopathist," means something or it means nothing. If it is meaningless there can be no legitimate reason for retaining it. If it has a meaning it means separation from and opposition to progressive medical science; it means an assertion of belief in a certain well-defined dogma opposed to reason and to experience; an assertion, moreover, made for effect not upon medical colleagues, but upon the lay and uninstructed public. It is only right, then, to hold those who make use of that name to all the implications of the voluntarily assumed designation.

A professed homeopathist can no more sever himself from the history of his sect than a mule can sever himself from the lineage of his sire. Without jackasses, no mules; without continual Hahnemannian fecundation in each generation, no homeopathy.

I agree fully with Dr. Roberts, that neither "a physician's political, religious, or social beliefs and affiliations, nor his opinion that in 'similars' he sometimes finds a remedy of value, should disqualify him" from membership in this Society. But who has ever urged that any of these things should be disqualifications? That one's possible "opinion that in "similars' he sometimes finds a remedy of value" does not act as a disqualification, Dr. Roberts himself shows in the further course of his paper, quoting, moreover, the language of the American Medical Association: "neither is there any article or clause of the Code of Ethics that interferes with the exercise of the most perfect liberty of individual opinion and practice.'"

What Dr. Roberts either fails to see, or refrains from commenting upon, is the fact that to hold the "opinion that in 'similars' one may sometimes find a remedy of value," is quite a different matter from labelling one's self "homeopathic." To believe that in electricity "one sometimes find a remedy of value," is not, therefore, to be an "electropathist;" to use water as a therapeutic agent in suitable cases does not make one a "hydropathist." The difference

is so obvious that to enlarge upon it would be to doubt the intelligence of the Society. Equally great is the difference between one who sometimes uses a remedy that in healthy persons would produce effects resembling some of the symptoms of the disease, and one who assumes a title which, if it means anything, means that his everyday practice is designedly based upon the so-called "law of similars." In words, Dr. Roberts ignores this difference; nevertheless, he practically admits it, or there would have been no necessity to write his paper. It does not require an elaborate thesis to demonstrate that twice two is four. One needs not eloquently plead for the removal of a disqualification that he admits does not exist.

Dr. Roberts is doubtless correct in his repeated assertions that "very many of those whom the public regard as homeopathists have comparatively little faith in the infinitesimal doses of Hahnemann, or in the infallibility or universality of his law," and that "to-day there is comparatively little belief in or practice of homeopathy as advocated by Hahnemann." A good lawyer would have hesitated to make such admissions in a paper written in defense of homeopathists. They prove, however, the sincerity of our former President; a proof strengthened when he further states that "the real homeopathy . . . . pays no attention to the microscopic and chemic changes in tissues and organs, but believes in selecting a remedy which . . . . causes symptoms similar to . . . . the totality of the symptoms seen in the patient."

But if this belief, which Dr. Roberts very properly characterizes as "unscientific and unworthy of credence," is in Dr. Roberts' own language "the real homeopathy," what kind of homeopathy is that which he says is practised by the great body of those "whom the public regards as homeopathists?" It must be an unreal, a false, a fraudulent homeopathy. And Dr. Roberts's proposition reduced to plain English is this: "We can not admit to membership in this Society the real homeopathists because they are loyal to a dogma which is unscientific and unworthy of credence; but we ought to admit the false homeopathists because they only pretend allegience to that dogma."

Mr. President, I have more respect for the honest simple-minded donkey than I have for the disingenuous and uncertain mule.

There is, however, one proposition in Dr. Roberts' paper with which I desire to express my full and unqualified assent, and upon the principle enunciated in which we can all, I think, find a common meeting ground. I, for one, should be most happy to aid in bringing about its incorporation into the organic law of this Society. Dr. Roberts says: "The test of qualification for membership should not be the college from which the applicant received his diploma, but an education enabling him to understand and appreciate the science of medicine, and an honest purpose to treat his patients by all means and methods which experience, investigation and research show to be serviceable."

With this opinion, let me repeat, I am heartily in accord. It is quite evident, however, that such an education as Dr. Roberts describes can not be received in a sectarian school, despite the use of any number of scientific textbooks; and one has only to read the first homeopathic journal that comes to hand to see that even among the "unreal" homeopathists, while they do have considerable knowledge of the empiric practices of physicians, which practices they copy more or less intelligently—very few have an adequate comprehension of the principles of scientific medicine. But the most certain evidence that the official representatives of homeopathy in Pennsylvania do not "understand and appreciate the science of medicine" has been given by their demand for the establishment of sectarian examining boards. Any one who elects to go before such a board, thereby declaring his lack of acquaintance with scientific therapeutics and practice, and the limitation of his studies to the theories and methods justly termed by Dr. Roberts, "unscientific and unworthy of credence," voluntarily excludes himself from the ranks of the profession; voluntarily enrolls himself as a sectarian. We certainly can not accept the certificate of such a board as evidence of an applicant's possession of "an education enabling him to understand and appreciate the science of medicine and an honest purpose to treat his patients by all means and methods which experience, investigation and research show to be serviceable." On the contrary, it is a direct evidence of partial and narrow education; of training limited to what Dr. Roberts has well termed, "unscientific and untrustworthy" theories and practice. If, however, a graduate of a sectarian college after sufficient practical experience to compensate for his want of school education, should desire to enter the ranks of the profession of medicine, and should evidence his sincerity, not ouly by abandoning his sectarian designation, but also by refusing to permit his patients to apply it to him; and if after due investigation the censors should report that he was in personal character, professional knowledge, and scientific spirit, worthy of admission to this Society, it would give me great pleasure to cast my vote in his favor.

To conclude: the great point of dissimilarity between physicians and latter-day homeopathists is the profession by the latter of adherence to a dogma which is not only "unscientific and unworthy of credence," and an insuperable obstacle to progress, but which they themselves do not half believe in; an "unreal" profession of faith which may serve to attract patients, but which can not be considered straightforward. So long as any one voluntarily makes such profession he renders it impossible for self-respecting physicians to meet him upon equal terms.

If, however, one whose personal character fits him for membership in this Society, but who had formerly professed homeopathy, becomes convinced of his mistake, and desires to join the ranks of scientific medicine, he should be freely received; provided only that he repudiates any sectarian designation and gives to the censors satisfactory evidence of his professional attainments. More than this we ought not to ask. Less than this we can not honorably accept.

DOMESTIC CORRESPONDENCE.

Hectic Fever.

AUSTIN, TEX., Oct. 9, 1893.

To the Editor:—After many years of special experience in the treatment of pulmonary consumption and its various complications, I find the prescription herewith enclosed the most efficient and least disturbing to combat hectic fever:

℞ Phenocoll.
Salicin ää gr. 48.
Sulphate Hydrastiæ gr. 24.
M. ft. 24 capsules.

Sig: One capsule every four to eight hours, as may be necessary to cool or prevent hectic fever. Of course, such other treatment, local or constitutional, as may be indicated should be diligently administered.

Yours truly, Q. C. SMITH, M.D.

Wayne County, Mich., Medical Society.

DETROIT, MICH., Oct. 10, 1893.

To the Editor:—At the annual meeting of the Wayne County Medical Society the following officers were elected for the ensuing year: President, Hal. C. Wyman, M.D.; Vice-President, E. B. Smith, M.D.; Secretary, R. H. Horner, M.D.; Treasurer, C. Henri Leonard, M.D. Board of Directors: J. E. Clark, M.D.; E. W. Jenks, M.D.; James Newell, M.D.; J. E. Westgate, M.D.; K. Gunsolus, M.D.

Yours truly, E. B. SMITH, Sec'y.

Diphtheria.

WISCONSIN STATE BOARD OF HEALTH,
OFFICE OF THE SECRETARY.
APPLETON, WIS., Oct. 6, 1893.

To the Editor:—Replying to your letter of inquiry: the newspaper reports of the prevalence of diphtheria in Grantsburg, Wis., have been greatly exaggerated. Official reports received at this office to October 5, show that there was probably an error of diagnosis of first cases, but since the true nature of the disease has been known it has been brought thoroughly under control.

There has been a total of seven deaths to above date. No new cases have been reported during the past week.

Very truly yours, J. T. REEVE, Sec'y.

BOOK NOTICES.

A Manual of Medical Treatment or Clinical Therapeutics.—By I. BURNEY YEO, M. D., F. R. C. P. Professor of Therapeutics in King's College, London. In two 12mo. volumes containing 1,275 pages, with illustrations. Complete work, cloth, $5.50. Philadelphia: Lea Brothers & Co. 1893.

This excellent work will be found very useful to general practitioners. Those fond of formulæ will find them here to their satisfaction and except that the author uses the English system of weights and measures and nomenclature, no fault can be found with them. In these days of International Societies, the tendency is to unite on the decimal system of weights and measures; but the Englishman is always satisfied with his "right and tight little island," and its customs; and in the nineteenth century when every nation but his own has adopted a decimal money standard, he stands aghast at any proposition to change the relative value of his absurd division of money into pounds, shillings and pence, and is utterly unable to understand that among the labor saving devices of scientific literature the decimal system ranks as chief.

The pathology of the diseases treated, although brief, is quite abreast of the latest literature on the subject, and the treatment recommended is unexceptionable. We notice, however, the same tendency to the recommendation of European health resorts and mineral waters, in exclusion of every other, that characterize most continental books on therapeutics. One may look in vain for a single reference to any American health resort, although the European resorts are very fully considered. It would be unfair to change this against this particular work, because this fault is common to all of its class. Why should an American, knowing the facts, recommend Nice in preference to Asheville or Los Angeles, or Carlsbad in preference to Hot Springs? The truth is, that in the matter of advertising our own mineral springs and healing resorts, we are not in the same class with the European. In that favored land, advertising has become a fine art.

We have wandered into these reflections, while examining this very valuable work of Dr. Yeo, and can only express the hope that when the second American edition shall be provided, the just advantages of American resorts may have their place. Notwithstanding the omissions pointed out, the work is deserving a place in the library and will be a welcome addition to the literature of medical therapeutics.

The Theory and Practice of Medicine Prepared for Students and Practitioners. By JAMES T. WHITTAKER, M.D., LL.D., Professor of the Theory and Practice of Medicine in the Medical College of Ohio; Lecturer on Clinical Medicine at the Good Samaritan Hospital; Fellow of the College of Physicians of Philadelphia; Member of the Association of American Physicians, of the American Academy of Medicine, and of the AMERICAN MEDICAL ASSOCIATION. With a Chromo-Lithographic Plate and three hundred Engravings. Octavo, 840 pages; Extra muslin, price, $5.75; leather, $6.50. New York: William Wood & Company.

It is customary for the unthinking to consider that surgery alone has profited by the wonderful discoveries of Pasteur, but a glance at the frontispiece of Dr. Whittaker's book and at the text of the various articles, will convince the most skeptical that this bacteriological epoch has revolutionized the practice of medicine not less than that of surgery.

The author fully accepts the microbic theory as applied to general medicine. He says in regard to malaria:

"Malaria has for a long time been supposed to be caused by a "*contagium vivum*, with no other positive proof, however, than the isolated experiments of Gerhardt of Berlin, who succeeded in producing the disease by injecting blood from the spleen of an affected individual into the veins of a healthy man. All efforts to discover any demonstrable and acceptable cause of the disease remained futile up to the time of the investigations of Laveran, 1881, a French military surgeon of Algiers, who succeeded in discovering in the red blood corpuscles peculiar amœboid bodies endowed with characteristic protoplasmic motion, and containing granules of pigment matter. Certain smaller bodies, of irregular, semi-lunar or crescentic outline are also found in the blood plasma, connected together often by fine thread. These bodies are present in the blood of malaria in greatest abundance during a chill, and disappear to a great extent after the attack. Many of them are clear, more or less spherical, sometimes flagellated, hyaline masses, undiscoverable without the use of dyes. They gradually increase in size until they fill the body of the corpuscle during which process they undergo peculiar segmentation. The intra-corpuscular body receives the name, *plasmodium*. Besides the plasmodium, flagellate structures with three to eight long active cilia, may be seen floating free in the blood of more acute cases, or may be discovered in the blood drawn from the spleen, which is regarded as the hotbed of malaria in the body. Golgi claims that the various types of fever, anomalies, etc., depend upon peculiarities or differences in these parasites, and Laveran maintains that the crescentic forms are found only in inveterate and cachectic cases. So, too, it is said that quinin destroys only the plasmodium, and that arsenic has more effect on the crescentic form. Concentrated aqueous solutions of fuchsin and methylene blue are the best staining agents for ordinary diagnosis."

We have quoted this paragraph thus freely that it may be seen how far the old lines have been cast off.

There is some lack of precision in the composition and a faultiness of style; for example: "Diseases of the mouth for the most part reveal themselves readily to inspection. Daylight is the best," etc.; whether daylight is the best inspector, the best disease or the best revealer is uncertain, but here as elsewhere, the average reader knows what impression or idea the author means to convey. The charm of the textbooks of Watson and of Flint lies in their clearness of expression and their precision, scarcely less than in their choice of words; the first two characteristics, the reader has a right to expect of all authors; the last is a gift of the gods to the few, and is not essential.

The work under review is without question the most original that has appeared on the subject for a long time, and the defects of composition that we have pointed out are so trifling in comparison with the great merit of the work, that we only mention them to insure their avoidance in the next edition, which we predict will speedily follow.

New York County Medical Association. Register of Members and Manual of Information. 12mo. cl. pp. 116. Published by the Association. New York: 1893.

This is an official list of the members of the New York County Medical Association, and as well the names of "other practitioners of rational medicine resident in the City and County of New York * * *

Unfortunately in the State of New York, and *there only*, the regular profession is divided, the meridian line being the AMERICAN MEDICAL ASSOCIATION and adherence thereto. In the existing *division* the New York County Association adheres to the National organization, and thus coöperates with the profession as it is maintained in all the other States of our common country."

A history of the recent effort by the AMERICAN MEDICAL ASSOCIATION to restore harmony is briefly recited.

Medical Society of the State of Washington.—Transactions for 1893. This little volume records the proceedings of the Fourth Annual Meeting. The papers are well written and show that our occidental brethren are quite up to the professional mark. Dr. G. D. Shearer of Tacoma, is the Secretary.

Wisconsin State Medical Society Transactions.—The annual volume of the Wisconsin State Medical Society lies on our table. It is well printed and contains some excellent papers, many of which exhibit much painstaking, original work. The Transactions compare favorably with those of other States. Dr. Chas S. Sheldon of Madison, is Secretary.

Syllabus of Lectures on the Practice of Surgery. Arranged in conformity with the "American Textbook of Surgery," by N. SENN, M.D., Ph.D., L.L.D. Flexible covers, cl. pp. 221. Philadelphia: W. B. Saunders. 1894.

This well-arranged syllabus of a system of lectures on surgery will be found very useful to teachers and students

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MEMBERSHIP IN THE AMERICAN MEDICAL ASSOCIATION.

This is obtainable, at any time, by a member of any State or local Medical Society which is entitled to send delegates to the Association. All that is necessary is for the applicant to write to the Treasurer of the Association, Dr. Richard J. Dunglison, Lock Box 1274, Philadelphia, Pa., sending him a certificate or statement that he is in good standing in his own Society, signed by the President and Secretary of said Society, with five dollars for annual dues and subscription for THE JOURNAL. Attendance as a delegate at an annual meeting of the Association is not necessary to obtain membership. On receipt of the above amount the weekly JOURNAL of the Association will be forwarded regularly.

All members of the Association should send their Annual Dues to the Treasurer, RICHARD J. DUNGLISON, M.D., Lock Box 1274, Philadelphia, Pa.

SATURDAY, OCTOBER 21, 1893.

QUARANTINE IN CANADA.

With reference to the World's Fair exhibit of the models of the disinfecting chambers in use at the St. Lawrence quarantine the following will be of interest:

Grosse Isle, about 700 acres in extent—larger than the grounds covered by the World's Fair—and thirty-one miles below Quebec, was purchased and equipped as a quarantine station in 1832, when cholera first visited this country. It was then provided with the best means and methods for the ends in view at that time known. There still remains a massive and roomy hot air disinfecting oven. It had also a liberal supply of detention and isolation buildings, wash houses, etc. The presence and use of these appliances and buildings provided all that sanitary science of that day considered requisite for a first class quarantine station during the sailing vessel period. They rendered it then and for many subsequent years the best equipped quarantine in the world.

The importance of this station will be appreciated when it is stated that in one season alone—the ship fever year, 1847—an immigration of more than 99,000 was dealt with there from May to September. The hospital records for that time show an admission of over 8,000 sick. A little monument in the cemetery bears witness to 5,424 interments in that short season alone.

Following the change from sailing vessels to steamships, as immigrant carriers, and the advancements in sanitary science, the station has been equipped with all the requirements of modern maritime sanitation. It has now three steam disinfecting chambers $25 \times 8\frac{1}{2} \times 8\frac{1}{2}$, double jacketed and fitted with steam gauges, vacuum pumps, electric contact thermometers, registering dials, etc., for the disinfection of clothing and luggage. In connection with these are three sixty-horse power boilers for steam supply, with feed pump, settling tank, etc. Above these chambers, in the second story, are twelve rain or needle baths for the personal washing of the suspected, while their clothes are passing through the steam chambers.

A detention building has been erected to give saloon passengers the same accommodation as they have in a first class steamship. Two buildings have been adapted with staterooms, baths, etc., for second cabin passengers, and the steerage buildings have had their wooden bunks replaced by galvanized iron beds. There is for this class of passengers also an ample supply of baths and water closets. These buildings, a mile and a half from the hospital division, provide for the detention and isolation of 128 saloon, 200 second cabin and 1,500 steerage passengers. There is also a bacteriological laboratory. Two powerful steam pumps supply water from the end of the pier to a 50,000-gallon reservoir from which it is piped to the buildings for all but drinking purposes. An artesian well is being sunk for potable water, and there is a condensing and aerating apparatus in connection with the boilers calculated to yield a daily supply of 2,000 gallons. The disinfecting steamer and the inspecting steamer are fully equipped with the most modern appliances, including steam hose, mercuric chlorid solution drenches, a sulphur dioxid blast furnace, etc.

All vessels are inspected at Grosse Isle or, in the case of mail steamers, at the advance inspection station at Rimouski, 150 miles below, where the mails are landed. If, upon inspection a vessel is found to be infected, it is dealt with at the Grosse Isle station; if found healthy it is allowed to proceed and land its immigrants at Quebec, or Levis opposite Quebec. At these sub-stations *all* the immigrant luggage from healthy vessels passes through steam disinfection before it is allowed to be checked or forwarded. More than one hundred thousand pieces of luggage from healthy vessels have been so disinfected already this season. The plant for this purpose, at the Quebec landing place, is similar to that already described for Gross Isle, except there is one chamber instead of three.

It may be added that Halifax, Nova Scotia, St. John's, New Brunswick, William's Head, in the Straits of Fuca, and the Province of British Columbia on the Pacific coast, have been similarly equipped with all these recognized requirements, rendering them also quarantine stations of the first class.

From the foregoing it will be seen that the utmost care is being taken by the Dominion of Canada to protect herself and her neighbors against the introduction of contagious diseases.

HOSPITAL GROUNDS TO BE BISECTED.—The trustees of the Episcopal Hospital of Philadelphia are up in arms on a proposition to bisect the hospital grounds by the city extension of Fillmore Street.

THE LIMITATION OF TUBERCULOSIS.

In our last week's issue we published an account of the action of the Michigan State Board of Health, by which the physicians of that State are hereafter required to notify the local health officer of the existence of consumption and all other diseases due to the *bacillus tuberculosis*, the same as in cases of smallpox, scarlet fever or diphtheria. The local health officer is to notify the State Board, and the State health officer will then give such instructions relative to restrictive measures, as the nature of the case and stage of the disease seems to warrant. The Board has already issued a pamphlet perhaps generally applicable, showing how to restrict these cases.

The great increase in the number of cases of tuberculosis throughout the country makes it desirable that some means of limiting the ravages of the disease be systematically undertaken, and if this move of the Michigan State Board shall prove beneficial, even in slight degree, the whole country will come into line.

The cause of tuberculosis being well known, and its mode of transmission thoroughly understood, there is no longer reason why determined effort should not be made to stay the ravages of this dire affliction. In consumptives, the care of the sputum, the mouth disinfection, the disinfection of all excreta, and the careful disinfection of the wearing apparel, are most valuable means of preventing the spread of the disease from the patient to others.

Personal restriction is a harsh measure, and should only be required in very advanced cases, those, in other words, that are better off when kept quiet; but there is surely reason enough for requiring the sick man to keep away from crowded assemblages and public conveyances. There is undoubtedly danger to the public health in allowing a patient with advanced phthisis to mingle freely with crowds, and contaminate the air with the products of expiration in public conveyances. The expired air coming direct from the lungs, more or less charged with tubercle bacilli, is as fruitful a source of propagation of the disease as could well be imagined.

It is not to be expected that the same limitation can be effected on other forms of tuberculosis, especially those of the bones and joints, and yet in many cases there comes a period in the history of these cases when there is generally disseminated tubercle, and often the same condition develops in the lung as in cases of primary lung infection.

The success or failure of these efforts of limiting the spread of tuberculosis, happily begun by the Michigan Board of Health, can not be determined for at least a twelvemonth. It is fortunate, however, that the system of registration in use in Michigan is so complete that we shall, soon after the year's trial, have definite and conclusive figures.

CHILD LABOR CERTIFICATES.

Many members of the medical profession are doubtless unaware of the enactment in Illinois of a very effective law, placing the duty of inspection of factories in which children are employed under a superintendent. The law absolutely prohibits the employment in factories of children under fourteen years of age. It provides that all children between fourteen and sixteen shall have a certificate, from an authorized physician, asserting that they are in such health and in such a state of development as to permit them in the judgment of the physician to work in the factories without danger. This certificate must assert that the physician has examined the applicant and seen him at work, and that he considers him able to do the work proposed without detriment to his subsequent health. In the operation of this law, children have brought to the inspector, certificates from physicians who have evidently made them in a perfunctory way, either entirely ignoring the condition of the applicant or having never seen him at work as the certificate requires. It must be remembered that this law is intended to prevent the premature decay and the arrest of development of our young factory laborers, and it is intended in this way to diminish the subsequent expenditures of the State, the county and the city in the care and maintenance of the defective classes. It is only necessary to invite attention to some of our more destructive trades, in which children are employed, to make apparent the wisdom of this provision. Incidentally these requirements would keep the labor of children out of the market and prevent undue reduction of the wages of adults through the competition of child labor. The physician, in examining the child, should thoroughly compare him with the well fed and well developed child of his age. He should pay special attention to the development in those directions most apt to be arrested by the trade into which the child is going, and by the position in which he will be required to work. The physician should do his work conscientiously, knowing that, if he neglects his duty in this matter, the wreck of humanity which is likely to result, will have to be maintained in wretchedness at the expense of his own children when they come to manhood and womanhood and become taxpayers. The physician should in no circumstances sign these certificates until he has actually seen the child at work in the factory for which the certificate is required.

THE HEALTH OF AMERICAN WOMEN.

Elsewhere in our columns PROF. EDMUND ANDREWS gallantly defends our American women from the aspersions cast upon them by DR. CYRUS EDSON who in a recent number of a monthly magazine held

them up to popular condemnation for alleged physical deterioration and defective training.

We doubt not that other defenders will break a lance in this fray under the leadership of PROF. ANDREWS in case it shall be necessary, but at present it seems that as DR. EDSON'S charges against American women were based on mere assertion, while PROF. ANDREWS supports his opinion by figures, the latter has decidedly the better side of the question, and should receive the thanks of the women of America for his timely and prompt defense.

ABSOLUTE ALCOHOL FOR SCIENTIFIC PURPOSES IS DUTY FREE.

The decision of the United States Circuit Court, S. D. New York, *in re* Kny, rendered June 27, 1893, is just reported in 57 Federal Reporter, p. 190, affirming the decision of the board of general appraisers, which reversed the classification of the collector of the port of New York on certain so-called "absolute alcohol." The latter classified it as "alcohol, 198 degrees, $4.95," at $2.50 per proof gallon, under the provisions of paragraphs 329 and 333 of Schedule H of the tariff act of October 1, 1890. Against this classification the importers protested, claiming that the article was a scientific preparation for college use, and duty free, under paragraph 677 of the free list of said tariff act. This "absolute alcohol" was made by chemical action by adding lime, and then distilling the liquid over again, by means of which the high percentage of 99.5 of alcohol was obtained, and was from two to three times higher in price than the regular alcohol of commerce, running only to 95 per cent. That it was "not intended for sale," within the meaning of said paragraph 677, was to be understood that it was not intended to be disposed of by sale to any other person than the corporation or society for whose special use the importation was permitted to be made, though in this case it was admitted that the importers' profit in furnishing the article to the colleges in question was about 20 per cent.

RIGHT TO USE GEOGRAPHICAL NAMES FOR MINERAL WATERS.

Whether a geographical name may become a trademark, when adopted as such, where its owner is the owner of the place of origin, and has the monopoly of the vendible product, is an open question. But where a person alleges title to all the mineral springs situated in a certain place, and the exclusive right to the sale of the waters thereof, and that the name, as applied to said waters, has become of great value to him, and has always constituted an important and necessary incident and means to the sale of said waters, that such a name may be so used, and will be protected against infringement by other persons not obtaining their product from the same locality, is well settled. So says the United States Circuit Court in the case of La Republique Francaise v. Schultze, decided July 3, 1893, just now reported, 57 Fed. Rep. 37, where it holds that the word "Vichy," used in connection with mineral waters, and derived from the locality in France where the waters are obtained, is a trade name, or "nom commercial," within the meaning of the industrial property treaty with France of 1883, and as such is entitled to protection in the United States though it has not been deposited as required by the treaty in the case of trade-marks.

TRY A NEW NAME.

We suggest that some of the "Tri-State" societies *try* a new name to avoid triangular confusion. We now have a Tri-State Society of the brethren of Missouri, Iowa and Illinois, another of Indiana, Kentucky and Illinois, another of Arkansas, Tennessee and Mississippi, and another of Alabama, Tennessee and Georgia. There is room in the AMERICAN MEDICAL ASSOCIATION for all of them, and all would be stronger if united in one great body. The great need of the profession is organization, and medical men should join the parent medical Association on the broad ground of mutual scientific interests and material advancement. The door is always open to members by application at any season. We hope each member may aid the great movement now going on, which has for its object the formation of one of the most powerful medical associations of the time, in the AMERICAN MEDICAL ASSOCIATION.

SOCIETY NEWS.

Twenty-first Annual Meeting of the American Public Health Association in Conjunction with the International Congress of Public Health.

Abstract of the Proceedings of the Joint Sessions of the Congress, held in Chicago, Ill., Oct. 10, 11, 12, 13 and 14, 1893.

OCTOBER 10—FIRST DAY—MORNING SESSION.

The Congress convened in Hall Seven of the Memorial Art Palace, and was called to order by the President of the World's Congress Auxiliary, the Hon. Charles C. Bonney of Chicago, at 10:30 A. M.

Prayer was offered by the Rev. Dr. Parsons, after which addresses were delivered by Hon. C. C. Bonney, Mrs. Charles Henrotin, Dr. A. R. Reynolds, Commissioner of Health of Chicago (representing the Mayor), Dr. E. Liceaga of Mexico, and Dr. Sarah H. Stevenson of Chicago.

Mr. Bonney then introduced Dr. S. H. Durgin of Boston, President of the American Public Health Association, as President of the Congress, who replied briefly to the several addresses, after which he delivered his Inaugural Address. (See October 14th issue of THE JOURNAL, p. 551.)

After some announcements by Dr. Brewer, the Congress adjourned until Wednesday morning.

OCTOBER 11—SECOND DAY—MORNING SESSION.

The Congress was called to order at 10 A. M. by the President.

The first paper read was by DR. ALBERT L. GIHON, Medical Director U. S. N., entitled, "Sanitary and Medical Service on Emigrant Ships."

REPORT OF THE COMMITTEE ON RESTRICTION AND PREVENTION OF TUBERCULOSIS.

This report was read by the Chairman of the Committee,

DR. J. N. MCCORMACK of Bowling Green, Kentucky. The Committee offered as its report the following conclusions and recommendations:

1. Tuberculosis has been conclusively demonstrated to be contagious, by bacteriological experiments, by clinical observations, and by a study of the history of the disease.

2. Tuberculosis is a preventable disease. Its preventability follows as a logical sequence upon its contagiousness, but has likewise been demonstrated in practical life.

3. The contagium of tuberculosis resides entirely and solely in broken down tubercular tissue. A person suffering from tuberculosis, therefore, does not become a source of danger to others until he begins to give off broken down tubercular tissue, either in the form of sputa from the throat or lungs, diarrheal discharges from the bowels, or matter from a tuberculous sore such as lupus, white swelling, cold abscess, scrofula or tubercular inflammation of a joint.

4. A person suffering from tuberculosis can be made entirely harmless to those about him by thorough sterilization of all broken down tissue immediately upon its being given off. With proper precautions it is therefore possible to live in the closest relation and upon the most intimate terms with consumptives without contracting the disease.

5. Tuberculosis is not hereditary. A predisposition to the disease can be transmitted from parent to offspring, but this is more true of tuberculosis than it is of all other contagious diseases.

6. A predisposition to tuberculosis can be created anew by malnutrition or by anything which depresses the nervous system.

7. Tuberculosis affects animals as well as man, and is identically the same disease in both. In domestic life human beings and animals mutually infect each other.

8. The media through which human beings are ordinarily infected by animals are milk and meat.

9. Houses in which consumptives have lived and in which immediate sterilization of all broken down tissue has not been practiced, are infected houses and are liable to convey the disease to subsequent occupants.

10. Spitting upon floors and into handkerchiefs, and permitting the broken down tissue to dry and become pulverized is a prolific cause of spreading tuberculosis.

11. Temporary occupation of hotel rooms, sleeping-car berths and steamer cabins by consumptives in the infectious stage can infect them so as to convey the disease to subsequent occupants, unless proper precautions are taken against contamination of the bedding, furniture and walls with broken down tubercular tissue.

We recommend the following practical measures for the prevention of the disease:

1. The notification and registration by health authorities of all cases of tuberculosis which have arrived at the infectious stage.

2. The thorough disinfection of all houses in which tuberculosis has occurred, and the recording of such action in an open record.

3. The establishment of special hospitals for the prevention of tuberculosis.

4. The organization of societies for the prevention of tuberculosis.

5. Government inspection of dairies and slaughter houses, and the extermination of tuberculosis among dairy cattle.

6. Appropriate legislation against spitting into places where the sputum is liable to infect others, and against the sale or donation of objects which have been in use by consumptives unless they have been thoroughly disinfected.

7. Compulsory disinfection of hotel rooms, sleeping-car berths and steamer cabins which have been occupied by consumptives, before other persons are allowed to occupy them.

The reports and recommendations of the Committee were adopted.

TROPICAL DIARRHEA.

This paper was contributed by SIR JOSEPH FAYRER of London, England, and read by DR. GIHON.

This is a form of disease which is generally, if not always, the result of tropical and climatic influences and the debility and cachexia induced thereby. It is now not infrequently observed in Europe, owing to the ever-increasing means of communication with foreign countries. It is apparently generally confined to adults, is insidious in its onset, slow in progress, and often, when not arrested sufficiently soon, fatal, owing to irreparable degenerative changes. It has been described by many observers both English and foreign, in India, China, Cochin China and Batavia. Most of the cases seen in this country come from India, China or Ceylon. In India it is met with frequently, where a form of it is known as 'hill diarrhea," from its proneness to affect dwellers in hill stations, especially those who have previously lived in the plains; atmospheric changes, vicissitudes of temperature, greater altitude, rarefied atmosphere and possibly water being concerned in its causation Some authors consider it a distinct disease from the white flux, which may be seen in any part of the country, but they are so much alike as to justify the belief in their identity, at all events for practical purposes. Occasionally there is a resemblance to certain forms of chronic dysentery; the two conditions may be associated or one may merge into the other.

Tropical diarrhea occasionally makes its appearance years after the subject of it has returned from the tropics. It not infrequently begins without any previous apparent derangement of health, though it is sometimes preceded by dysentery, diarrhea, some indication of malarial infection or functional derangement of the liver or other abdominal viscera, and is not noticed until excessive soreness of the tongue and loss of strength and wasting reveal the gravity of the condition.

Semeiology.—This form of diarrhea may begin with simple looseness of the bowels, or may supervene on ordinary diarrhea or chronic dysentery. The action produces a sense of relief. The dejecta at first may be natural and bilious, but gradually become light-colored, frothy, pultaceous and copious. As the disease advances they are occasionally tinged with blood, and the sufferer becomes more attenuated, exhausted and incapable of any prolonged exertion. The appetite may be good, but rawness and tenderness of the mouth and tongue frequently accompanied by aphthous spots and ulcerations interfere with its gratification.

Treatment.—From the insidious character of the disease, tropical diarrhea not infrequently gains ground before radical measures for its relief are resorted to. Successful issue depends much on the patient's resolution and perseverance in carrying out instructions. Alternations of temperature, errors of diet, fatigue or excitement, exertion, mental or physical, should be avoided. Physiological rest should be insisted on.

There is a tendency in the earlier stages to get well. The object is to favor this tendency and not thwart it by neglect of precautions. Diet is the most important consideration and must be strictly regulated and adhered to; and scarcely less important is the question of clothing, habits and modes of life. Milk *alone* should be the only diet, and it must be given in small quantities often repeated, say from four to six ounces every hour, day and night. Larger quantities at longer intervals will not do. When in the twenty-four hours an adult is able to take three to four quarts of cow's milk in this way, ample nourishment is afforded to support his strength and to enable him to recover. This method of treatment was begun by the author before his leaving India in 1872. After prolonged experience and trial of all other forms of remedy, he has found it more effective than anything. It seldom fails except in the very advanced and chronic cases, or in very aged persons. The conclusion arrived at is that though drugs are generally of little avail, if milk, taken as prescribed, does not succeed, there is but small chance that any other form of treatment will do so.

CHOLERA INFANTUM AND ITS TREATMENT.

By DR. MANUEL SEPTIEN of Queretaro, Mexico.

The treatment proposed is exceedingly efficacious. It consists in the total suppression of all food and medicine during twenty-four or forty-eight hours, and the prescription of pure cold water in great abundance. The author said there is scarcely any disease that causes a greater mortality in childhood than that known by the name of estival diarrhea or infantile cholera. In one single week, the last one of July of the present year, there were 1,126 deaths in 33 of the largest cities of England, caused by this disease alone. Statistics show everywhere a notable increase in the number of deaths during the months of June, July and August, that is to say, during the warmest season of the year. The malady is not limited to children only, but attacks also a great number of adults and old people, being less mortiferous in the latter than in the former, in whom it causes a mortality of 50, 60, and even 80 per cent. Only Asiatic cholera, to which it has the greatest similarity, can be compared to it for its ravages. It is undoubtedly of microbic origin as recent investigations have shown.

Energetic drainage is the supreme effort which nature executes to rid the organism of the deleterious elements that poison it. To try to suppress it by therapeutical means

is not an easy or rational thing to do. It would only hinder the natural curative process. The only thing that can be done is to oppose the extreme dehydration of the tissues by restoring to them without delay at least a part of the water lost. This is the therapeutical indication, and no drug can take its place, nothing but pure cold water.

All the curative methods tried leave much to be desired. Their results are very uncertain; all consist in the administration of various medicinal substances, non-astringents, absorbents, antiseptics or anti-peristaltics, and in the prescription of some alimental regimen. Such treatments, according to the author, are not in conformity with the great principle that governs therapeutics, namely *the physiological rest of the organ that suffers*.

The author had practiced successfully the treatment recommended by Luton of Reims. He summarized the points of his paper as follows: 1, to suppress all nourishment and medicine for one or two days; 2, to give at discretion pure cold water; 3, to return by degrees to a rational regimen.

ORIGIN AND DISSEMINATION OF TYPHOID FEVER.

By PROFESSOR W. T. SEDGWICK of Boston. Professor Sedgwick's remarks on this subject were impromptu. He first dwelt upon the reorganization of the State Board of Health in Massachusetts in 1886, shortly after which an experiment station was established at Lawrence for the purpose of studying typhoid fever chemically and bacteriologically, and looking to the purification of the water. In 1890 an epidemic of typhoid fever broke out upon the Merrimac River in the city of Lowell, and shortly afterwards appeared at Lawrence, nine miles below. These epidemics afforded unusual opportunities for the investigation of the epidemiology of typhoid fever.

SECOND DAY—AFTERNOON SESSION.

MR. ALLEN HAZEN of Lawrence, Mass., read a paper entitled

THE SEWAGE DISPOSAL PROBLEM IN AMERICAN CITIES.

He said one of the striking features of the sanitary development of American cities is the very rapidly increasing number of places which for one reason or another are treating in some way their sewage. It is not so many years since there was hardly a sewage purification plant in the United States, while at the present time there are some thirty municipalities in a dozen different States which give their sewage a more or less thorough treatment. Of these a number are in the far West, where the sewage has a commercial value for irrigation which has probably been considered quite as important as the sanitary advantages secured by the treatment, but the greater number are in the East, where a dense population and increasing desire for cleanliness in the waters of streams and lakes, and particularly in water supplies, has brought to an issue problems which as yet have scarcely received the attention of the inhabitants of the less thoroughly settled States.

There are two sewage problems which are entirely different in their nature, although the same remedies may often be applied to both. There is first the pollution of rivers and lakes to such an extent that they produce a nuisance to the people who live upon their banks, and secondly the pollution of water supplies by sewage. The first case is often that of a city upon the banks of a small river which becomes so reduced in volume in dry weather that the sewage may fairly be said to be the predominating element in its composition. Up to a certain point, rivers are capable of taking sewage without causing a serious nuisance to the people who live upon their banks, so long as they do not drink from them, but when this quantity has passed, deposits are formed, decomposition sets in, and the stream is rendered foul in appearance and objectionable in its odor. The exact quantity of sewage which can be mixed with water without causing a nuisance varies with local conditions and can only be approximately estimated, but as long as the limit is not passed, and the bodies of water not used for drinking, the disposal of sewage by turning it into such water is entirely unobjectionable and by far the most satisfactory method possible.

Where the sewage of a town is entering the public water supply of a neighboring town, or worse yet, its own supply, the problem is entirely different. The removal of the organic matters of the sewage becomes of secondary, although still an important matter, while the removal of those germs of disease, which would otherwise work such mischief among the consumers of water becomes the one important point.

The author then dwelt upon the possibility of sewage treatment by chemical precipitation, which he said was the same the world over. Local conditions are only of secondary importance. The experiments undertaken by the Massachusetts State Board of Health at the Lawrence Experiment Station, some six years ago, indicated that the local conditions in Massachusetts would allow the treatment of sewage upon land even with more favorable results, both as to quantity of sewage treated and quality of effluent obtained, than had been supposed to be the case from a study of European practice.

It is impossible, by any combination of chemicals, to secure the purification which approaches even remotely the result obtained by land treatment, but when the problem is simply to keep the water into which the sewage flows reasonably clean, the result with careful manipulation is quite satisfactory. When, however, the treated sewage finds its way into the source of the public water supply, the effluent produced by even the most complete chemical precipitation can not be regarded as an entirely unobjectionable addition, and such water should be further treated by filtration before use.

THE COLLECTION AND DISPOSITION OF ANIMAL AND VEGETABLE WASTE IN THE CITY OF MILWAUKEE.

By DR. U. O. B. WINGATE, Commissioner of Health of Milwaukee. As early as 1879 the city of Milwaukee began to grapple with the garbage problem, and it has been a long and serious struggle until a recent date. In the winter of 1891 and 1892, the State Legislature passed an act authorizing the Common Council of the city to enter into a contract for the disposition of garbage, with the advice of the Mayor and the Commissioner of Health. It was decided to let the contract for five years to a company who would build a plant fourteen miles out of the city, collect and remove to said plant all garbage, offal, dead animals, both great and small, and animal matter of the city of Milwaukee, including refuse matter from the commisson houses, etc., to said plant in which they would dispose of it in a sanitary manner. This contract went into effect and the work was commenced in June, 1892.

The Company constructed a plant at an expense of some $110,000. They purchased a powerful steam barge for transportation; they put on fifty steel, air-tight wagon tanks for collection, and two large covered wagons for the collection of large dead animals. Since the first of September, 1892, the plant has been in operation to the satisfaction of the city officials of Milwaukee, creating no nuisance or stench whatever that can be reasonably objected to in its location, and the collection and transportation of the material during that time has been fairly satisfactory.

DISPOSAL OF GARBAGE AND WASTE OF WORLD'S COLUMBIAN EXPOSITION.

By COL. W. F. MORSE of New York. Since the meeting of the American Public Health Association two years since, marked progress has been made in the destruction of garbage and waste of cities by fire. Six years' experience has shown this method to be of far greater value than any other, and improvements in furnaces and reduction in cost of operation have steadily made it more popular and useful.

England has now furnaces in every large city and the number is yearly increasing. This country is awakening to the value of this method, and it has been inspected and recommended at a great number of places. The most striking and effective work done in the world is at the World's Fair, where two furnaces of the Engle Sanitary Company have been at work since the first of May. It was early seen that the sanitation of the Fair, the care of the health of the great multitudes resident and who would come as temporary guests, would demand the best, and only those which had been thoroughly tested, methods of providing for the drainage, and the collection and disposal of the great mass of daily accumulating garbage and organic waste. After the drainage was arranged the question of sewerage disposal and garbage destruction came up. A contract was made with the Engle Sanitary Company of Des Moines and New York, for two garbage cremators to burn 100 tons of sewerage sludge, garbage and stable refuse. These two furnaces were built in the fall, and at the opening of the fair were ready for work. They are in the extreme southeastern part of the grounds, near the Forestry Building, back of the power house of the Intramural Railroad, employing the well-known device of the Engle Company, two fires, one at either end, the one burning the mass of garbage on the grates, the other destroying

the smoke, and all results of this combustion. These furnaces have been in constant work every day since May 5.

The garbage is brought at night from 11 P. M. to 8 A. M., and placed at once in the furnaces. From twenty-five to forty loads each of one ton, having sometimes ashes or water in large amounts mixed therewith. Everything goes into the furnaces—four horses, two camels, cows, deer, elk, pigs, goats, dogs, etc., all follow the same road and are burned with equal ease. No results can be seen from the chimney. A thin, invisible, carbonic acid gas, discharged at a temperature of 1,000 degrees is all that results. No smoke, no odors, nothing that can be offensive is detected. Though in daily use an observer would not know any work was done, unless he came to the building. At 10 A. M. the loads of sewerage cake begin to come. This is a thick, heavy, soggy mass of lime, fecal matter, paper pulp, etc., with 60 per cent of water mixed. The quantity varies from ten to eighteen or twenty-five tons, and is the most refractory material to burn yet found. The fires are oil fed by jets of air, a pressure of twelve ounces of air doing the same work that is done in the boiler house with 120 pounds of steam. The ashes are used by Exposition people for filling low places, though they have a value of $10 per ton for fertilizers.

There are six burners spraying oil, the whole using thirty-seven and one-half gallons per hour. The cost for fuel and labor is from 75 to 80 cents per ton for sewerage sludge and 50 to 70 cents for garbage.

At other places where these same furnaces are used, the cost is reduced by bringing to the furnace, the paper, sweepings, and all kinds of city combustionable waste, which makes fuel to burn wet matter and reduces the cost of from 12 to 15 cents per cubic yard or 30 to 40 cents per ton. Official reports from Savannah were read showing the cost for last eight months to be 11 cents per cubic yard.

The work has been continuous; no stoppage, no nuisance, performed under observation of thousands of persons, inspected by many interested in this work from abroad, and has met with deserved credit and favor from the Board of Administration. By adoption of similar furnaces at four points in Chicago the whole garbage nuisance could be abolished, the same work done for the city that is here performed, at a reduced cost, and the vexed problem of garbage disposal settled and got rid of once for all. This is no theory or experiment. This company was asked to do this work because they had demonstrated elsewhere their ability. There are forty furnaces, or more, built by the Engle Company and in successful operation, more than twenty times as many as have been built by others, but this is the most successful instance of the destruction of garbage on a large scale that has been seen in this country.

HOW CAN WOMEN PROMOTE PUBLIC SANITATION?

By DR. SARAH H. BRAYTON of Evanston, Ill. She said as instructors in hygiene, nurses have a wider scope for sanitary reform than physicians; living as they do with the families they attend, their opportunity for the diffusion of knowledge is greater. Undoubtedly there is much that women could do on health boards; there is more that they must do among their own sex to increase the sum of sanitary knowledge among all classes and promote intelligent coöperation with health authorities, whoever they may be.

THE PROGRESS OF SANITARY KNOWLEDGE AMONG THE WOMEN OF ENGLAND.

This was the title of a paper contributed by LADY PRIESTLEY of England, and was read by MRS. HENRY WADE ROGERS of Evanston. The author of the paper went back twenty years when she first joined the Executive Committee of the National Health Society, and attended the meetings in a small, dingy, draughty room in a house about as unsanitary as any to be found in London, and traced the progress made in sanitary science from that time to the present. The author would impress upon all mothers, and those who are responsible for the welfare of others, the desirability of giving personal care and forethought, which alone can avert the consequences of unsanitary surroundings.

NOTES ON CHOLERA AND ITS MANAGEMENT IN HULL, ENGLAND.

This was the title of a paper contributed by DR. JOHN WRIGHT MASON, Medical Officer of Health in Hull, but was read by DR. CHARLES N. HEWITT of Minnesota, in the absence of the author.

The first epidemic of cholera occurred in 1832, but the total number of deaths from the disease did not exceed 270. On the 10th of August, 1849, the great visitation of the disease commenced. The total number of cholera and diarrhea victims during the invasion was 1,860, being one in forty-three of the whole population of 11,000. Six hundred persons died from cholera alone, in one week in September. The average age of the victims was from 30 to 36 years of age. Of the total number of deaths recorded, 1,738 belonged to the laboring classes and 122 to the wealthy. The greatest mortality occurred in those parts of the town where the levels were the lowest, and in which the unsanitary surroundings were the most noticeable. It is recorded by an eminent minister that on one day—Black Sunday—he himself interred no less than forty-three bodies of his fellow citizens. The water supply was at that time obtained from the stone ferry waterworks, situated one and a half miles from Hull and two and a half miles from the mouth of the river, the water being obtained from the River Hull, the widespread character of the epidemic being greatly attributed to the impurity of the river water. Since 1849, Hull has increased both in wealth and population, and its area has been considerably extended. The number of emigrants passing through the port en route for America has averaged between 50,000 and 60,000 yearly during the past ten years. The infectious diseases (notification) act, 1889, has been applied to the port as well as to the urban authority. Measles was included among the notifiable diseases on the 10th of February, 1893.

Cholera follows the line of international communication, and with the modern increased facilities for rapidity of transit, so is the danger of its possible invasion increased by emigration or otherwise. England does not depend upon the false security of quarantine, but rather upon its sanitary administrations, and each district should be in such a state of sanitary preparedness that the disease if imported should not spread. The experience of 1892, during the epidemic at Hamburg, in those ports which were exposed, and possibly none more so than the port of Hull, which was in daily communication with that cholera stricken city, must have inspired confidence in the public mind in this country and the continent of Europe, that medical inspection, the due regard for the rigorous inspection of all articles likely to convey infection, improved sanitation and efficient hospital equipment, were alone sufficient to arrest the progress of the disease. Our first line of defense against the introduction of cholera consists of the medical inspection upon arrival both by day and night, of all vessels from cholera infected or suspected ports, and should cholera have developed during the voyage among any of the passengers or crew, the removal of the patients to hospital, the isolation of suspected cases and the detention on board the vessel of such persons who may be in a filthy or otherwise unwholesome condition, and who can not satisfy the medical officer of health as to their place of destination.

The second line of defense against the possible introduction of cholera, or other diseases, should be well protected, and the early preparations against the means by which such diseases if imported, spread, should be studied, thought out and perfected in the interim, and not during epidemic prevalence and excitement. Special attention should be directed towards a pure and unpolluted water supply, the periodical and regular removal of all excreta and refuse matters in the midst of populations, the frequent flushing of all drains and sewers, the prevention of overcrowding, the systematic inspection of common lodging houses, and lastly, but not least, our food supplies.

Hull is essentially a privy town. The death rate of Hull from all causes for the ten years, 1882 to 1891, averaged 20.7 per thousand. The death rate from fevers during the same period was equal to 1.26 per thousand, and for diarrhea alone 1.10 per thousand.

The author then dwelt upon the management of cholera. The precautions which are adopted in Hull of what has been described as "the movement of a sanitary column," as follows:

Immediately upon the receipt of a notification of cholera, or of sudden illness of a choleraic character, either by the medical practitioner in attendance, the sanitary inspectors or the police, the medical officer of health is communicated with and immediately visits the case, or in his absence his assistant. Should the case admit of removal, the horse ambulance, fully equipped with trained men in attendance is immediately requisitioned by telephone. The assistant inspector of nuisances for the district in which the case occurs is forthwith acquainted, and makes his appearance with a column comprising flushers, lime washers and disinfecting staff. He superintends the removal of the inmates of the house to the hospital for the purpose of bathing, and the

disinfection of their clothing, the disinfection of the house, together with all articles of bedding, clothing, etc., which have been exposed to infection, and the destruction of such articles as may be ordered by the medical officer of health or his assistant. The contents of the privy are removed to the destructor for cremation and the interior cleansed, disinfected and lime washed. The subsidiary drains in the immediate contiguity of the house are thoroughly flushed, and disinfectants are freely distributed in the neighborhood of the outbreak.

EVENING SESSION.

At this session DR. GEORGE M. STERNBERG, Surgeon General of the United States Army, delivered a stereopticon lecture on "Pathogenic Bacteria." Slides of the typhoid bacillus, the bacillus of anthrax, of tuberculosis, of glanders, of tetanus, of influenza, of hog cholera, etc., were shown.

OCTOBER 12—THIRD DAY—MORNING SESSION.

The first paper read was by DR. D. E. SALMON, Chief of the Bureau of Animal Industry, entitled,

TUBERCULOSIS AND THE FOOD SUPPLY.

The author assumed without argument, as already established by scientific investigation, that tuberculosis is a parasitic disease, that it is caused by the multiplication of a specific microörganism in the tissues of the animal body and by no other means. Of the two methods by which the disease is contracted, with man as well as with animals, it may be admitted that the most frequent and therefore the most important is the inhalation of the microörganisms suspended in the inspired air. The speaker had no means of estimating the proportion of cases of tuberculosis which arise from infected food, but he was prepared to admit that tuberculosis of the abdominal organs and tubercular meningitis, particularly of children, were generally caused in this way. The author then considered infection through the milk supply and infection through the meat supply. Tuberculosis is one of the most common diseases of milch cows. It exists in many dairies, and may affect 50, 75 or 100 per cent. of the animals in large herds. We do not know the average proportion of cows affected in this country, but in the dairies around our large cities from 3 to 5 per cent. have been affected when the diagnosis was made by the ordinary methods of examination. In the United States we have no statistics of the results of the tuberculin test, except with herds known to be tuberculous. Fortunately the milk from all tuberculous cows does not contain the bacilli. When there are tubercles in the udder, however, the milk may contain immense numbers of these germs, and this is particularly the case if the tubercular mass softens and its contents escape into the milk ducts. The milk from cows so affected must be considered an extremely dangerous article of food.

The prevalence of tuberculosis in dairy cows can be lessened, and the danger from infected milk diminished, by a careful and periodical inspection of the herds from which the milk supply is obtained. This inspection must consist not only of a physical examination, but must also include the tuberculin test. There must in addition be some means provided for securing the destruction of animals found to be tuberculous.

SYPHILITIC INFECTION AS A VEHICLE OF THE COMMUNICATION OF TUBERCULOSIS.

By DR. MANUEL CARMONA Y VALLE of Mexico. The author of this paper cited the history of a case demonstrating the possible association of the syphilitic virus with the pathogenic agent of tuberculosis, and the possibility of transmission not only of the syphilis but of the tuberculosis also. He had found in the ulceration of the throat both characters.

THE INFLUENCE OF HABITATIONS IN THE PROPAGATION OF TUBERCULOSIS.

By DR. MANUEL GUTIERREZ of Mexico. Pulmonary tuberculosis is more frequently observed in the United States than in the Republic of Mexico. The statistical records give a proportion of from 118 to 120 per thousand in America, while in sunny Mexico it does not reach the number of 60 to every thousand. One of the causes which contribute to produce so notable a difference in the propagation of so dangerous a disease, is the difference of the elevation in both countries, because we know that dry air is not a vehicle for the multiplication and generation of the bacillus of Koch, and the relative rarefaction of the air is in a direct ratio to the elevation. Mexico being 2,257 meters above the sea level, it is consequently not difficult to explain its superiority in arresting the conditions favorable to the propagation of a disease which undermines so many constitutions.

The author's attention has been called to the fact that not only in the hotels, and public establishments, but also in private dwellings in the United States, there are rooms constantly illuminated with artificial light and in which the light of the sun never penetrates. The individuals who work therein are deprived for many hours of the beneficial action on the economy that we know solar light exerts, and we know that these privations and the special conditions that accompany it can contribute to the development of tuberculosis by producing 1, the anemia and its consequent state of malnutrition, preparing the ground that serves for the cultivation of the germs of the disease; 2, increasing considerably the temperature of the place illuminated, constitutes also a propitious cause of multiplication of the pathogenic principles involved and in the tubercular process.

PROPHYLACTIC AND THERAPEUTIC VALUE OF FOOD.

This paper was contributed by MRS. ELLEN H. RICHARDS of Boston. She said the prophylactic value of food is to keep the human body in a high condition of health. The main object to be gained is to establish a higher standard of health in the community, to make as widely known as possible the fact that most of the ill health now prevalent is needless; that a little self-denial, a little more attention to the rules of hygiene, a little more living in the open air would cause a large number of the diseases now so common to disappear.

HYGIENE OF HAIR DRESSING AND BARBER SHOPS.

By DR. ANGEL CONTRERAS, Pueblo, Mexico. The disease which persons are most liable to contract in barber shops is scurf, and the author therefore touched on what appeared to him the most important points in the consideration of this matter. Scurf is understood to be a disease of the capillary system caused by the presence of vegetable parasites. The disease can be transmitted by some animals which already have it; but the contagion most commonly takes place from person to person, and in families, in educational establishments and in barracks, the disease assumes an endemic character. Several times the center of this propagation has been found in a hair dresser's or barber's shop, and has arisen from the use of instruments which have been badly cleansed. Barbers and hairdressers ought therefore to be very careful in cleansing the utensils which have served for one person before they are employed on another. All the utensils should be subjected to the action of heat for a space of ten minutes, in a vessel or receptacle at a temperature of 120 degrees, and the razors in an oil bath.

THE WATER SUPPLY OF CHICAGO; ITS SOURCES AND SANITARY ASPECTS.

By ARTHUR R. REYNOLDS, M.D., Commissioner of Health of Chicago, and MR. ALLEN HAZEN. The extensions of the various tunnels within the last two years have undoubtedly secured for the city a water less liable to sewerage pollution than was formerly obtained. The available analyses of the water are perhaps inadequate to measure accurately the improvement, but fortunately we can apply that most satisfactory of all tests, the typhoid fever death rate. The improvements in the water intakes have not all been made at a single date, but if we compare the two years ending September, 1892, and Sept. 30, 1893, we find that during the earlier years the shore intakes at Lake View and Chicago Avenue were in common use while the four mile tunnel was not yet opened; while for the greater part of the latter year the shore inlets were entirely closed and the four mile tunnel and the one mile tunnel at Lake View were in use. For the year ending Sept. 30, 1892, the number of deaths from typhoid fever in Chicago was 1,790 in a total of 26,646, or a percentage of 6.72. For the year ending Sept. 30, 1893, the deaths from typhoid fever were 712 in a total of 26,977, or a percentage of 2.64. It is most unfortunate for this comparison that the old supplies were partly in use during the first four months of the latter year, before the four mile tunnel was opened. We may believe that if this had not been the case the comparison would have been still more favorable to the improved supply.

It is a well-known fact that people using a water supply to which they are not accustomed are often more susceptible to any infection which it may contain than are those using such water regularly. A striking illustration was furnished by Philadelphia in the Centennial year, when the typhoid

death rate was nearly doubled, while in Chicago the present year for the first five months of the Fair period the rate has been less than half as high as for the corresponding months of the preceding year; and for the entire year under consideration, in spite of the vast numbers of visitors continually present, there has been a reduction of over 60 per cent. in the typhoid fever death rate. This reduction is most striking, and it can hardly be doubted that the improvements in the water supply have been the chief, if not the only cause. As there is no marked local distribution of the typhoid fever, so there were no exceptions to the general improvement with better water supply. Not a single ward but showed a substantial reduction. Stronger evidence could hardly be produced to show the causal relation between the contamination of the water supply and typhoid fever. The mortality percentages from typhoid fever in a number of cities may be compared as follows: Chicago, 1892, 6.72; in 1893, 2.64; Philadelphia, 1892, 2.22; Boston, 1.22; Paris, 1.01; New York, .90; Brooklyn, .80; London, .49; Berlin, .42. The cities having the lowest typhoid fever death rate, London and Berlin, use only filtered water. London draws nearly all of its water from the two grossly polluted rivers the Thames and the Lea and, after filtering it, applies it to a population that is almost free from typhoid fever. It may be a question worthy of consideration by the engineers whether filtration would not be as cheap and effective a means of improving the water supply as the farther extension of the tunnels.

REMOVAL OF PATHOGENIC BACTERIA FROM DRINKING WATER BY SAND INFILTRATION.

This paper was read by MR. GEORGE W. FULLER of Lawrence, Mass. That drinking water is a carrier of some diseases there can be no doubt. Numerous laboratory experiments by many investigators indicate that the bacteria generally attributed to be the specific organism of typhoid fever, Asiatic cholera and other diseases live in ordinary drinking water for many days. The results of long-continued investigations at the Lawrence Experiment Station, show that the typhoid bacillus is able to live in the water of the Merrimac River, in greatly diminished numbers, for a period of at least twenty-four days. Other investigators, using different water and different conditions, estimate the length of life of this germ at from three to eighty days. The duration of life of the cholera spirillum in various waters has been observed to be from two days to seven months. Modern hygiene demands that drinking water shall be free from pathogenic bacteria, and the means by which such water can be obtained are worthy of our most careful consideration.

During the past forty years many filter plants have been constructed in Europe, and numerous experiments in the filtration of water have been made, particularly during the past decade. This is largely due to the aid of bacteriology which enables us to determine the actual efficiency of filters with regard to the removal of bacteria. The operation of many filters is quite satisfactory, as is shown by the low death ratio from these diseases, conveyed by drinking water and by the results of numerous bacterial analyses.

In summing up our present knowledge upon the removal of pathogenic bacteria from drinking water, we may state that in addition to the experience of certain European cities, the Lawrence investigations covering a period of more than five years, and including the bacterial examination of more than eleven thousand samples of water, indicate that it is entirely practicable to construct filters that will economically purify water and remove more than 99 per cent. of bacteria which may be present in the unfiltered water.

"The Potable Waters of the Country Presenting Many Dangers." This paper was read by Dr. Thomas Noriega of Mexico. "Statement of Scientific and Experimental Data for the Establishment of International Maritime Police," was read by Dr. E. Liceaga of Mexico. Dr. Domingo Orvanaños of Mexico, read a paper entitled, "Difficulties in the Practice of Quarantine in Some of the Mexican Ports." Other papers were read as follows on this subject: "The Canadian Quarantine System" by Dr. Frederick Montizambert of Quebec, Canada; "Quarantine System of Texas," by Dr. R. M. Swearingen of Texas; and "Quarantine," by Dr. S. B. Olliphant, President of the Louisiana State Board of Health.

EVENING SESSION.

At this session, addresses were delivered by Dr. Sarah Hackett Stevenson of Chicago, on "Municipal Sanitation;" by Miss Ada Sweet of Chicago, on "Voluntary Health and Public Improvement Societies;" a paper by Sir Charles Cameron of Dublin, on "Importance of Civic Public Hygiene to the State;" "Municipal Sanitation of Minneapolis," by Dr. E. S. Kelly, of Minneapolis, and "The Importance of Sanitary Bureaus; Their Economic Organization," by Dr. Jesus E. Monjaras, Sanitary Inspector of San Luis Potosi, Mexico.

OCTOBER 13—FOURTH DAY—MORNING SESSION.

Papers were read at this session as follows: "The Best Way to Restore the Practice of Vaccination to Its Proper Place as a Preventive of Smallpox," by Dr. Charles N. Hewitt, Secretary of the Minnesota State Board of Health; "Animal Vaccine. Why It Should be Preferred to Human Vaccine," by Dr. Miguel Marques of Chihuahua, Mexico; "La Grippe," by Dr. Gregorio Mendizabal of Mexico; "Diphtheria in the City of Mexico," by Dr. Roque Macouzer of Mexico; "Notes on Scarlet Fever in the City of Mexico," by Dr. Francisco Marin of Pueblo, Mexico; and "Unrest," by Dr. William Oldright of Toronto.

AN EXPERIMENT IN DISINFECTION—HOW AN EPIDEMIC OF PNEUMONIA WAS CHECKED.

This was the title of a paper read by DR. JEROME COCHRAN of Montgomery, Ala. The paper dealt with an epidemic of pneumonia checked by disinfection. The total number of cases during the epidemic was ninety-three; total number of deaths thirty, nearly one-third of the cases. The epidemic occurred in the prison at Pratt Mines, Alabama. The prison was divided into three sections, and while the disinfection was going on in one section the convicts belonging to that section were crowded into the other two sections. The mattresses were taken off, and these together with the blankets were scattered over the floor. Then by means of a force pump and a long hose pipe the ceilings, walls and the floors with their contents were literally deluged with a solution of bichiorid of mercury, 1-1000, until the bichlorid solution stood in puddles and ran in rivulets on the floors. Th e mattresses were turned over so as to be wetted as thoroughly as possible on both sides. Dr. Cochran has more confidence in the disinfecting power of heat than in the bichlorid. The mattresses, blankets, etc., were therefore put into large steam chambers that had been constructed for the purpose and kept there for six hours, after which they were taken out and dried. In the meantime the disinfected wards were thoroughly scrubbed out, whitewashed and fitted up so that they could be occupied again the next day. The convicts, before they were returned to their old quarters, were required to take a bath and to put on clean clothes. In one week the epidemic, attacked at the period of its most rapid increase, went out like a fire under a deluge of water.

A CONTRIBUTION TO THE STUDY OF YELLOW FEVER FROM A MEDICO-GEOGRAPHICAL AND PROPHYLACTIC POINT OF VIEW IN THE MEXICAN REPUBLIC.

This paper was read by DR. E. LICEAGA, President of the Superior Board of Health, Mexico. The author presented the following conclusions:

1. The places where yellow fever reigns and which can be considered as centers of infection are in the Gulf of Mexico, Vera Cruz, Frontera, Campeche and the districts on the northern coast of the Yucatan Peninsula, the last named separated by the Yucatan canal from the island of Cuba, where the fever also reigns. On the great Pacific Coast, which belongs to the Mexican Republic, there is not a single yellow fever center.

2. All the Mexican territory on the Gulf of Mexico and on the Pacific Coast is well adapted for the disease when imported.

3. Yellow fever has become epidemic in the following places of the coast on the gulf: Matamoros, Altamira, Tampico, Tuxpam, Papantla, Misantla, Nautla, Alvarado, Goarzavoalcos Minatitlan Lagang and San Juan Baptista de Tabasco.

4. The epidemic has extended into the interior, but never into places situated more than 1,008 meters over sea level.

5. On the Pacific there is not a yellow fever center, but it has been imported into the following places: on the peninsula of Lower California, La Paz y Todos Santos; on the continent, Guaymas, Altata, San Blas, Mansanillo, Santiago, Acaponeta, Puerto Angel, Salina Cruz, Tonala Soconuzco, Tapachula and San Benito, and in the interior in Hermosillo y Culiacan.

6. Immunity against yellow fever is obtained after having had the disease in any of its forms. It is possible that this immunity may be lost at times, but it is seldom the case, as

it happens with typhus, smallpox and scarlet fever, which may be had by a person who has had them.

7. The vaccine of Jenner against smallpox, and others which science has discovered, authorize us to look for the one that will prevent the yellow fever. The inoculations against this fever which Dr. Manuel Caramona y Valle has practiced with success should be tried on a large scale, in a uniform manner, in order to be able to find out if they are efficacious. If this experience confirm it, then they should be made compulsory in the countries where the fever reigns. If they should not prove worthy, then the inoculation of blood serum, as proposed by Dr. Sternberg, from persons enjoying immunity, should be tried on a large scale and in a uniform manner.

8. The purification of the drinking waters, used by persons who have to expose themselves to contract the disease, should be recommended. The purification of the water used on board the ships leaving or calling at infected ports should be proposed.

9. The sanitation of the places which are yellow fever centers should be done at once.

10. To prevent, by means of sanitary police measures, the importation of fever into places where it can be developed.

HOW SHALL OUR LEPERS BE CARED FOR?

Was read by DR. BENJAMIN LEE of Philadelphia, Pa. He said the State Board of Health of Pennsylvania, and the Board of Health of the city of Philadelphia, have had some unpleasant experiences with lepers, which had led both of these bodies to appeal to the general government to establish a colony or colonies where these unfortunates might be provided with the comforts of home and medical care and nursing, and at the same time might cease to be a menace to the health of those with whom they were thrown in close contact. The United States had only gone so far as to make the affection quarrantinable at the seacoast, and to order those found suffering from it on arriving vessels to be at once returned to the ports from which they came.

Dr. Manuel Carmona y Valle of Mexico, contributed a paper on "Yellow Fever." Papers were also read by Dr. Luis E. Ruiz of Mexico, on "Typhoid Fever in the City of Mexico;" "Some Reflections on the Infection and Contagion of Typhus Exanthematicus," by Dr. Ramon Icaza of Mexico; "Registration," by Dr. S. W. Abbott, Wakefield, Mass.

Dr. John H. Rauch of Chicago, Ill., introduced a resolution to suspend immigration until the pandemic of cholera in Europe was over which, after some discussion, was referred to the Executive Committee.

The American Public Health Association elected the following officers:

President—Dr. E. P. La Chapelle of Montreal.

First Vice-President—Dr. Manuel Carmona y Valle of Mexico City.

Second Vice-President—Dr. J. N. McCormack of Bowling Green, Ky.

Treasurer—Dr. Henry D. Holton of Brattleboro, Vt.

Permanent Secretary—Dr. Irving A. Watson of Concord, N. H.

Place of next meeting—Montreal, Canada, October, 1894.

NOTE:—Although the gathering was denominated an International Congress of Public Health, very few outside of the members of the American Public Health Association contributed to the proceedings. The bulk of the work was done by the members of the American Public Health Association.

After drafting introducing, and adopting resolutions of thanks, the President declared the Congress adjourned.

New York County Medical Association.—The first meeting of the New York County Medical Association after the summer vacation, was held on the evening of October 16, when Dr. Edward G. Janeway, who was until recently a Commissioner of the Board of Health, read a paper on "Dangers to the Public Health from Overcrowding Population." The discussion on it was opened by Dr. Charles A. Leale, ex-president of the Association, who is especially familiar with this subject on account of his labors in connection with St. John's Guild, which every year treats so many thousands of the children of the tenement houses on its floating hospital excursions and at its seaside hospital on Staten Island. Among others who took part in the discussion were Drs. J. R. MacGregor, also an ex-president of the Association, and J. Lewis Smith, the veteran authority on diseases of children. A second paper was read by Dr. Frank Van Fleet, on "The Necessity of Perfect Vision in the Education of the Young."

The County Association is in a most flourishing condition, as evidenced by the handsome register of members and manual of information just issued by it, which shows an active membership of no less than 920, as against 805 at the same time last year. Besides the annual report of the Association, the work referred to contains the decision of the AMERICAN MEDICAL ASSOCIATION in regard to membership, and report of committee of conference in the interest of harmony in the State of New York, the report of the committee in regard to the revision of the Code of Ethics and By-laws of the National Association, lists of all the presidents of the New York State and AMERICAN MEDICAL ASSOCIATION, the present officers, and articles on the medical profession and the Columbian Exhibition, the International Medical Congress and the Pan-American Medical Congress.

C., M. & St. P. Railway Surgical Association.—The first meeting of the surgeons of this road was held in room 536, Rand-McNally Building, Chicago, Oct. 4 and 5, 1893.

The meeting was called to order by Dr. A. D. Bouffleur, the surgeon of the road at Chicago, who in a brief address of welcome, outlined the objects of the Association and the work of the session.

Dr. Solon Marks of Milwaukee, was elected chairman for the meeting. Dr. A. J. Bouffleur was elected permanent secretary, subject to the approval of the management of the company, which concurred in the selection.

The following papers were presented:

Injuries of the Head, Dr. H. B. Hemenway.
Shock in Railway Injuries, Dr. L. A. Squire.
Leading Indications for Treatment in Severe Injuries of the Extremities, Dr. J. A. Jackson.
Treatment of Contused and Lacerated Wounds, Dr. Wm. Mackie.
Importance of Controlling Hemorrhage after Railway Injuries, Dr. Ira K. Gardner.
Antisepsis Simplified, Dr. M. S. Caldwell.
First Aid to the Injured by Trainmen, Dr. A. B. Poore.
Injuries to and About the Eye, Dr. C. D. Westcott.
Sacro-iliac Dislocation, with a Case, Dr. N. M. Dodson.
Antiseptic Uses of Potassium Permanganate, Dr. A. L. Clark.
Special Ethics of Railway Surgeons, Dr. Geo. R. Moore.
Technique of Amputations, Dr. G. D. Ladd.
A Case in Practice, Dr. O. W. Phelps.
A Case in Practice, Dr. N. A. Drake.

Each paper was thoroughly discussed. As there were one hundred and thirty surgeons present, the meeting was both a numerical and a scientific success.

President Roswell Miller addressed the Association on the relations of the surgeons to the management, and assured them of his hearty coöperation in all their efforts.

The future management of the Association was consigned to Dr. Bouffleur, the secretary, and an executive committee consisting of Drs. A. B. Poore, Wm. Mackie and B. Thompson.

Pennsylvania Railway Surgeons.—The Twelfth Annual Meeting of the Association of Surgeons of the Pennsylvania Company was held at the Seventh Avenue Hotel, Pittsburg, Oct. 10. Members were present from all divisions of the system, and a large number were unable to reach the meeting on account of a railway accident. In the absence of President J. J. Larkin of South Chicago, Dr. Mont Linville of New Castle, presided.

An interesting paper was read by Dr. C. B. Stemen of Fort Wayne, on "Antiseptic Precautions in the Treatment of Railway Injuries," which was discussed at considerable length by the members present. A number of other papers were to have been read, but were dropped from the program an account of the inability of the authors to be present. Considerable business of a routine nature was transacted and the following officers were elected for the coming year: Dr. Mont Linville, New Castle, President;

Dr. J. B. Vail, Lima, First Vice-President; Dr. E. J. McCollum, Tiffin, Second Vice-President; Dr. George C. Stemen, Fort Wayne, Secretary and Treasurer; Dr. H. Nye, Enon, Pa., Dr. L. C. Botkin, Burgettstown, and Dr. S. A. Craig, Freedom, Executive Committee.

The next meeting of the Association will be held in Chicago in October, 1894.

The Railway Surgeons.—The first annual convention of the Ohio Association of Railway Surgeons met at the Forest City House, Cleveland, October 12. President S. S. Thorne called the convention to order with twenty-five delegates present.

American Public Health Association.—The following officers were elected for the ensuing year: Dr. Emanuel P. La Chappelle, President, Montreal: Dr. M. Carmona y Valle of Mexico, First Vice-President; Dr. J. N. McCormack of Bowling Green, Ky., Second Vice-President; Dr. Henry D. Holton, Brattleboro, Vt., Treasurer; Dr. Irving A. Watson, Concord, N. H., Secretary. Place of meeting Montreal, October, 1894.

Medical Journal Publishers' Association.—An organization was perfected at Hotel Willard, Washington, September 8, and elected the following officers: President, Dr. L. B. Edwards, *Virginia Medical Monthly;* Vice-President, Dr. J. C. Culbertson, *Lancet-Clinic;* Secretary, Dr. F. King, *Polyclinic;* Treasurer, J. MacDonald, Jr., *International Journal of Surgery;* Executive Committee: Drs. Stowell, LeGrand, Fairchild, Fassett and Chambers. Next meeting at Cincinnati, in December.

The West Tennessee Medical and Surgical Association will be held at Brownsville, Tenn., October 26 and 27. Dr. J. R. Hillsman of Trezevant is President, and Dr. F. L. Sim, the editor of the *Memphis Medical Monthly*, is Chairman of the Committee on Publication.

The Northwestern Wisconsin Medical Association, held their quarterly meeting October 10 at Stevens Point, Wis.

The Oneida County, N. Y. Medical Society held its semi-annual meeting at Rome, N. Y., October 10.

NECROLOGY.

DR. H. A. YOUMANS, an old settler and highly respected physician, died at the home of his son in Waukesha, Wis., October 4.

DR. WALTER G. STEBBINS, died at Boston, Mass., October 8 of diphtheria.

DR. WM. FITCH of Dryden, N. Y., died September 14. He was graduated from Albany Medical College in 1846.

DR. CLARENCE ANDREWS of Kansas City, Mo., at Adrian, Mich., October 14.

DR. FRANCIS J. CHAMBERLAYNE, at San Diego, Cal., aged 77, October 5.

DR. JOSEPH VANDYKE, at Charleston, Ill., October 12.

DR. BENJAMIN NORTON of Hornellsville, N. Y., October 3.

DR. L. P. DODGE of Farmington, Minn., died September 29.

DR. T. H. GIBBEY at Manchester, N. H., October 16.

DR. EMIL GUELICH, at Alton, Ill., October 15.

DR. RICHARD A. MATTHEWS, athlete and physician, died of stomach trouble October 14, at the age of 28 years. He was for two years a member of the *Evening World's* Corps of Physicians for the Sick Babies, and was also the surgeon for the Columbian line of steamships, which runs between New York and Colon. Dr. Matthews was born in this city and graduated from the New York University. He began to practice medicine in 1891. He was a member of the old Manhattan Athletic Club, and played in its football team in 1887. He was a member of the Staten Island Athletic Club, and played in the lacrosse team. He also rowed in the junior eight-oared crew of that club.—*New York World.*

MISCELLANY.

The Cholera in Hamburg.—Quarantine, S. I., Oct. 4, 1863. Dr. Nash has lately written the following:

To the Editor of the Times-Democrat:

"Having just arrived in New York on the 'Augusta Victoria' from the city of Hamburg, I consider it my duty to state publicly the result of my observations while on my post there.

"I have been stationed in Hamburg since Jan. 6, 1893, as the representative of Dr. Jenkins, health officer of the port of New York, and I think that during that time, with the opportunities at my command, I have been able to inform myself thoroughly as to the actual sanitary condition of the city, the ways of the authorities, and the interests which stand in so close a relationship with America, and I feel bound to contradict the unfair criticisms which have been passed upon the city, and correct the false impressions which have gone abroad as to the conditions prevailing there.

"During the whole of the present year the health of Hamburg has been excellent, the average mortality being far below that of the principal cities of the world. The cleanliness of the streets is exemplary; they are swept and scraped and washed until they almost shine again; the blind alleys and courts are also well looked after. The street brigades are uniformed, and handle their implements in an expert manner. The markets in the different sections of the city are models of neatness. At the close of business hours each day every scrap of refuse and garbage is at once removed under the supervision of the sanitary police corps.

"On my arrival the city was as yet unsupplied with filtered water, but now and since several months the city enjoys the boon of a pure filtered, germ-free water in abundance for all purposes. I can hardly say enough in praise of the city and its authorities for the thoroughly scientific manner, the tireless energy and disregard of expense with which the enormous plant supplying the city with pure water has been established in the short time. At ebb tide the water is led into immense basins, where it is filtered through different strata of sand pipes. Bacteriological examinations repeatedly made of this filtered water have all testified to its purity, and its universal use has given additional proof of it.

"An unfortunate accident occurred on the 16th of last month, by which unfiltered water obtained entrance into the service mains. This accident was due to giving way of the earth, and was immediately repaired, but the consequence of the contamination became apparent. A few sporadic cases of cholera occurred, which, however, spread alarm only in places far distant from the city, where the news was used to injure Hamburg, as had been done repeatedly on former occasions. In the city there was no alarm; the people felt their security and confided in the efficiency of their sanitary authorities. The result has warranted the expectation. Altogether only a small number of cases occurred, mostly of a mild type, and the latest news shows that even these have disappeared. The city will now doubtless return to its remarkable good health record, which, even during the hottest part of the year, was an extraordinary one.

"Tourists and travelers to and from the European continent can not do better than choose the route via Hamburg on account of the superior sanitary conditions of the city

as well as for its other attractions. For Hamburg is a magnificent place. To see the beautiful Alster-Basins, surrounded by pretty parks and fine avenues, lined with handsome buildings and villas, is alone well worth a journey. Good hotels, excellent restaurants, amusements to suit every taste, clean streets and the activity of life and business of a great commercial port, and other points to be considered.

"A few words now regarding the Hamburg-American Packet Company:

"This company has complied readily and thoroughly with the measures required by Dr. J. H. White, the representative of the United States Marine Hospital Service, stationed in Hamburg, and also with whatever recommendations have been made by myself, as representing the New York State Quarantine. Suggestions, of whatever nature, have been gladly received, and cheerful and ready help has been given to both of us in our work. The disinfection of ships and baggage, the supervision and scrutiny of passengers and other measures tending to the welfare of all concerned are done under our control and, in my opinion, no steamships leave any port in more complete sanitary condition than do the steamers of this company. Dr. Jenkins has repeatedly made the same statement regarding the same steamers arriving in New York.

"The company has also, of its own accord, frequently adopted precautionary measures of considerable importance and at great cost, solely for the purpose of guarding against the possibility of any danger.

"As an American residing in Hamburg, and as an official I testify to the conditions as outlined above, and gladly bear witness to the sincerity of the intentions of the city authorities and of the great corporations located there, and if I ask you to publish this letter it is with full reliance on the American spirit of fair dealing, and with the hope that my statement may tend to remove unjust reflections. I am, dear sir, yours very truly, DR. GEORGE W. NASH,

Representing New York State Quarantine at Hamburg.

To Admit the Physicians.—Opening of Health Department Hospitals to them to be considered to-day. The details of the plan to open the Health Department hospitals for contagious diseases, to the medical profession for the mutual benefit of the profession and the department, will be laid before the Board of Health this afternoon by President Wilson. The plan is simple: it proposes the appointment of six attending physicians, whose duty it shall be to visit the hospitals twice a week at any rate. They may, if they choose, visit every day and at all hours.

Besides these, a fixed number of internes will be assigned to the hospitals, who shall act as assistant resident physicians and hold their places for six months each. This is the system adopted in other hospitals the world over. The internes will be graduates of the medical schools. Their appointment amounts to the establishment of a post-graduate course, which will speedily become exceedingly popular.

The attending physicians will be chosen from among the professors and experts of the four medical colleges in the city. They will be chosen for their conspicuous ability and prominence as practitioners, and upon them will devolve a great share of the responsibility for the management of the hospitals. As lecturers at the colleges they will be allowed to take their classes with them on their visits to the island, under the restrictions of the Department as to dress and disinfection. Thus clinics will be set running in the most natural way—not once or twice a week, but probably every day.

Physicians and internes will be unsalaried, but the latter will live in the hospitals to which they are attached. It is expected that the plan will be promptly adopted and the scheme as here outlined carried out at once. It is likely even that the staff of attending physicians may be chosen and invited to accept. Nothing that has happened in the history of the department has claimed and received such hearty support on the part of the medical profession. *The Evening Sun's* announcement yesterday of the impending opening of the hospitals aroused the interest of the doctors thoroughly. It was the one topic of discussion among them yesterday. Without an exception, they indorsed the new departure of the Health Department as the most intelligent and most promising move made by it in recent years.—*New York Evening Sun*, Oct. 11, 1893.

The Illinois Board of Health.—The Illinois State Board of Health has issued a circular on the necessity for public vaccination, and says: . . . .

"Indications are now multiplying, which point to a general epidemic spread of the disease throughout the whole country as cold weather approaches. Introductions of the contagion will thus grow more frequent and, sooner or later, are likely to find any unprotected community and there establish an outbreak. The State Board of Health urges upon you the necessity of preparation while there is yet time—during the remaining weeks of pleasant autumn weather. Vaccination of all unprotected and revaccination of all those vaccinated within the past few years should be secured without delay. . . . .

"The State Board of Health enjoins upon all local health authorities the urgent necessity of measures to secure the vaccinal protection of all over whom they have control. Local ordinances—if not already enacted—should be passed forthwith, enforcing vaccination or revaccination upon all school children, public, private and parochial; upon school teachers, janitors and others; upon all public employes and officials; through all employers of labor, skilled and unskilled, upon their employes as a condition of further employment; through superintendents of public and semi-public institutions, upon every inmate, employe and official of such institutions; all tramps, and especially upon immigrants from abroad. The Board will lend every assistance in its power to secure the end in view and invites correspondence on the subject, to be addressed to the secretary.

"By order of the Board: JOHN W. SCOTT, M.D.,
"*Secretary.*"

The First Professional Organization.—Norwich Doctors Wanted a Medical Practice Act in 1774.—The medical practice act suggests the historical fact that the first step toward professional organization and protection in Connecticut was taken by Norwich physicians on the 3d of March, 1774. On that date the following advertisement appeared in reference to the project:

"A number of Physicians in the County of New London, taking into consideration the importance of those that enter the practice of Physick being endued with competent knowledge to prosecute the undertaking in such a manner as shall best promote the public good, request their brethren of the Faculty in said County to meet at the house of Mr. Azariah Lathrop, in Norwich, on Thursday the 24th inst., at 10 o'clock in the forenoon, to consider upon the matter and prefer a Memorial to the General Assembly at their next Session, that the Practice of Physick may be put under some better regulation."

This memorial, which was signed by Theophilus Rogers and ten other physicians, was the first movement toward medical organization in Connecticut. "Quacks and charlatans" had disgusted the regular physicians, and their demand was for the appointment of a committee legally authorized to examine and approve candidates, if found qualified. The movement, which was in advance of the age, was negatived in the lower house; but the memorialists were the pioneers in the cause of American medical organization, and their unsuccessful first attempt was the initiative step in a series of efforts which have since resulted in the permanent establishment of flourishing State and National Associations, which separate the qualified physician from "the ignorant pretender."—*Norwich* (Conn.) *Bulletin*, Oct. 9, 1893.

Yellow fever continues its ravages at Brunswick, Ga., from twenty-five to thirty new cases appearing daily. A despatch from Brunswick on Monday stated that supplies of food were being received very slowly and that unless large contributions were quickly made there would be great suffering among the people.

Report of Muncie Smallpox Cases.—The report of the Muncie smallpox cases has been submitted to the Governor. It

shows that since the disease first appeared there the number of cases has been 136. Fourteen cases are now under treatment at homes and the hospital. Thirty-nine convalescents are reported. The same number are well, but have not been discharged. Thirty-one cases have been cured. There have been sixteen fatal cases. Last week $1,000 was appropriated from the State epidemic fund to aid in suppressing the disease. The Governor will decide to-day how much will be allowed for the next seven days. The cases are being concentrated at the hospital, and it is thought that not so much money will be needed.—*Indianapolis News*, Oct. 13, 1893.

A Professional Beautifier.—A certain Dr. Robert Fisher, a professional beautifier of Vienna, has been revealing the secrets of the trade. He declares that many mothers put their daughters through a whole course of beautification before marriage. The doctor divides his treatment into the negative and the positive. By means of the first method he removes blemishes that exist and by the latter he improves the good points that nature has already given the subject. He has even gone so far as to invent a "tear pump," designed to aid in the timely display of emotion.—*N. Y. Sunday Mercury.*

Looking for a Hospital Site.—Drs. William H. Ford, E. O. Shakespeare and William Welsh, who were appointed several months ago by the Mayor to select a site for a new municipal hospital, with that object in view, have visited several places in outlying districts. The present hospital location, it is said, retards the progress of building operations in the northern section of the city, while the proceeds to be obtained by a sale of the property with its large grounds would be ample to secure far better accommodations for the treatment of contagious and infectious diseases.—*Philadelphia Public Ledger.*

N. Y. Pasteur Institute.—The commodious new building of the New York Pasteur Institute, which is beautifully situated in Central Park, at the corner of 97th Street, was opened with appropriate ceremonies on October 9th. Addresses were delivered by Dr. Paul Gibier, the Director of the Institute, by Prof. R. Ogden Doremas, and by Vicomte d'Alzac, Consul General of France; after which a collation was served.

The Mayor did not Approve.—The authorities of the city of New Haven rejected the recommendation of the Board of Health for the establishment of a contagious disease hospital. The mayor is reported by the *New Haven News* of October 11, as saying he preferred to have the general hospital take care of these cases! Sapient Mayor!

Infant's Hospital.—An infants' hospital is to be established at Athol Springs, thirteen miles from Buffalo, by the "Fresh Air Mission" of that city. Dr. Eugene Smith of Detroit, has sold to the Mission the Athol Springs Hotel and the Spring House. The hospital is intended to be used in the summer only.

Punished for a Wrong Diagnosis—The Chinese Way.—Four members of the Imperial College of Physicians at Pekin, who failed to give a proper diagnosis of the Emperor's recent indisposition, were punished by having a year's salary taken away from them.

Legacy to Philadelphia Hospitals.—The Ingersoll estate was partially divided, October 11, by which the Episcopal Hospital, the Children's Hospital and the Consumptives Home, all of Philadelphia, each received one-third of $476,574,67, the residue on hand at the date of the distribution.

Suffering at Brunswick.—Great suffering prevails at Brunswick, Ga., on account of the yellow fever epidemic, and the inhabitants have appealed for relief. Many supplies have been sent, but there is still greater need of supplies than ever. It is not likely that the situation will improve until after frost.

Dr. Harry B. Faville of Madison, Wis., has accepted the chair of general medicine in the Chicago Policlinic. He will still live in Madison as but one half his time will be needed in his college work.

Won his Case.—Dr. J. E. Reeves of Chattanooga, who was sued for damages by the "Amick Consumption Cure" Company, for denouncing the concern as fraudulent, won his case in court.

He Failed to Notify the Board of Health.—Dr. Leander A. Cliffe of Roxbury district, Boston, was arrested and found guilty of violation of law for failure to report a case of diphtheria.

Sanitarian Injured.—Dr. Lewis Balch, Secretary of the State Board of New York, received a painful injury by being thrown from a horse near Albany on the 7th instant.

Emergency Hospital.—An emergency hospital was dedicated with appropriate ceremonies, at Nashua, N. H., October 10.

A New Hospital was opened at Little Falls, N. Y., on October 16 by the Hospital Association of that city.

Dr. R. Harvey Reed of Mansfield, O., has been appointed consulting surgeon to the "Big Four" railroad.

The New Hospital Building at the Soldiers' Home, Milwaukee, has just been completed.

A Hospital for contagious diseases has just been completed at Spokane, Washington.

THE PUBLIC SERVICES.

Army Changes. Official list of changes in the stations and duties of officers serving in the Medical Department, U. S. Army, from October 7, 1893, to October 13, 1893.

First Lieut. GEORGE D. DE SHON, Asst. Surgeon, is relieved from further duty pertaining to the medical section of the War Department Exhibit, World's Columbian Exposition, Chicago, Ill., and will return to his proper station, Ft. D. A. Russell, Wyo.

First Lieut. ALLEN M. SMITH, Asst. Surgeon, will proceed without delay to Ft. Missoula, Mont., and report to the commanding officer of that post for temporary duty, to enable Capt. WILLIAM D. CROSBY, Asst. Surgeon, to take advantage of the leave of absence granted him.

Capt. GEORGE MCCREERY, Asst. Surgeon U. S. A. (Ft. Sidney, Neb.), is granted leave of absence for one month, to take effect about Oct. 15, 1893.

Navy Changes. Changes in the Medical Corps of the U. S. Navy for the week ending October 14, 1893.

Medical Inspector GEORGE H. COOKE, from Navy Yard, League Island, Pa., and to special duty in Philadelphia, Pa.

Surgeon E. Z. DERR, ordered to Navy Yard, League Island, Pa.

Surgeon B. S. MACKIE, detached from duty in Philadelphia, Pa., and wait orders.

LETTERS RECEIVED.

(A) Ashmun, G. C., Cleveland, Ohio; Atkinson, W. B., Philadelphia, Pa.; (B) Bernd, Henry & Co., St. Louis, Mo.; Breedlove, J. W., (2) Fort Smith, Ark.; Bausman, A. B., Chicago, Ill.; Battle & Co., St. Louis Mo.; Bates & Morse Adv. Agency, New York, N. Y.; Bouffleur, A. I., Chicago; (C) Cohen, S. Solis, (2) Philadelphia; Comegys, C. G., Cincinnati, Ohio; (D) Dios Chemical Co., (2) St. Louis, Mo.; Dolber, Goodale Co., Boston, Mass.; Dunglison, R. J., Philadelphia, Pa.; DeVilbiss, A., Toledo, Ohio; Doughty, C. H., Cincinnati, Ohio; Dalton, Robt. H., St. Louis, Mo.; (G) Grigsby, W. E., Blandinville, Ill.; Galbraith, T. S., (2) Seymour, Ind.; (H) Harriman, J. W., Iowa City, Iowa; Hardy, H. T., Kaneville, Ill.; Heard, T. J., Galveston, Texas; Holland, J. W., Philadelphia, Pa.; Holmes, Bayard, Chicago; Hewitt, C. N., Red Wing, Minn.; (I) Imperial Granum Co., New Haven, Conn.; (J) Johnson, H. L. E., Washington, D. C.; Johnson, C. F., San Francisco; Jones, A. M., Eaton, Ohio; (K) Kennedy, Robt. Jr., (2) New York, N. Y.; Kelly, Howard A., Baltimore, Md.; (L) Lundran, C. E., Jamestown, N. Y.; Lydston, G. Frank, Chicago; Lauer, F. D., Fort Adams, R. I.; LeMond, R. F. Denver, Col.; (M) McClaughry, R. W., Pontiac, Ill.; Mellard, P. H., Minneapolis, Minn.; Marks, A. J., New York, N. Y.; Moran, Geo. W., Detroit, Mich.; Mullen, A. J., Michigan City, Ind.; (N) New York Post Graduate, New York, N. Y.; (P) Powell, H. H., Cleveland, Ohio; Peck, Geo., Cooperstown, N. Y.; Parvins, The S. H. Sons Co., Cincinnati, Ohio; Parkinson, Jas. H., Sacramento; Price, M. F., Colton, Cal.; (R) Risley, S. D., Philadelphia, Pa.; (S) Stearns, F. & Co., Detroit, Mich.; Street, David, Baltimore, Md.; Smith, Prescott, Cincinnati, Ohio; Smith, Frank Trester, Chattanooga, Tenn.; Smith, E. B., Detroit; Smith, Q. C., Austin, Texas; Sutton, R. S., Pittsburg; (T) Tompkins, J. E., Fredericksburg, Va.; Topliff, C. L., New York, N. Y.; Toner, Jas. M. (2) Washington, D. C.; (U) Unger, J. W., West Point, Miss.; (V) Vincent, D., LaPorte, Ind.; Vetter, J. C. & Co., New York, N. Y.; (Z) Zeigler, J. L., Mount Joy, Pa.